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An Introduction to the Botanical Type Specimen Register

STANWYN G. SHETLER

with Mary Jane Petrini, Constance Graham Carley, M. J. Harvey, Larry E. Morse, Thomas E. Kopfler, and Collaborators



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ABSTRACT

Shetler, Stanwyn G., with Mary Jane Petrini, Constance Graham Carley, M. J. Harvey, Larry E. Morse, Thomas E. Kopfler, and Collaborators. An Introduction to the Botanical Type Specimen Register. Smithsonian Contributions to Botany, number 12, 186 pages, 3 figures, frontispiece, 1973.—In the first part, the development of a computer-based system for storing and retrieving information about botanical type specimens is described from its pilot stage to its present operational stage. The concept, purpose, and scope are explained, and the operational procedures are outlined. Ways of using and contributing to this computerized register of types, both in the short-run and in the long-run, are proposed. A statistical summary of the content of the Type Register as of 30 September 1972 is given. Over 13,000 specimens representing more than 10,000 taxa have been registered. The second part consists of a Catalog of more than 1,000 specimens representing over 600 taxa of the genus Carex (Cyperaceae), which are deposited in ten major American herbaria, and the Catalog is crossindexed five different ways: by author, publication date, collector, country, and herbarium. An introduction summarizes the preparation and editing of the Catalog. This Carex Catalog represents the first published installment of the Type Register and as such is intended to serve as an example.

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Listed here by institution are the persons who have collaborated in the compiling of data from their respective herbaria for the Carex Catalog:

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Dr. Mason E. Hale, Curator of Cryptogams; Dr. Dan H. Nicolson, Associate Curator of Phanerogams

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Foreword

It always has been the policy of the United States National Herbarium to make its collections as easily available as possible. We have welcomed visitors and loaned specimens on request since the founding of our herbarium. Now, in an effort to make our collections even more accessible, we have undertaken a new project to compile a computerized catalog of our type collection of approximately 65,000 specimens. Eventually, we hope to broaden this catalog, which we are calling the "Botanical Type Specimen Register," to include the type collections of many other institutions so that it will serve as a union listing of types. Already we have enlisted the cooperation of other institutions, and the computer file presently includes records from more than a score of herbaria.

The United States National Herbarium, a worldwide collection of plants now totaling some 3 million specimens, is administered by the Smithsonian Institution's Department of Botany, a unit of the National Museum of Natural History. The Department of Botany has played a pioneering role in the development of the Museum's active program in data processing. The Type Register is the Museum's first operational effort in cooperative, multi-institutional (network) data banking and, as such, is of special interest. If this approach to common data banking proves successful, it will point the way for many cooperative efforts

in other branches of natural history.

Although the Type Register is still very much in its infancy, we are zealous to demonstrate its potential to the botanical community with a tangible product so that we can receive advice and counsel from the community on the basis of concrete results while the data bank is still small and susceptible to modification. This publication should prove useful in itself as a catalog of type specimens of *Carex*, particularly to specialists on the family Cyperaceae. The larger purpose, however, in issuing a preliminary catalog of limited scope at this time is to demonstrate the concept of the Type Register in concrete terms and thereby to solicit the collaboration of all plant systematists in molding the Register into

an effective, scholarly tool for future generations of the profession.

The computer file presently registers over 13,500 type specimens, representing some 10,500 vascular plant taxa. Thus the *Carex* Catalog, with its 1,000 specimens and 600 taxa, is a printout of less than 10 percent of the current, rapidly growing file. Less formal and less expensive means of putting out the information will be tried with future installments, and it may become desirable or necessary at some point to begin publishing in microform. Perhaps the most common and economical mode of disseminating the accumulated information will be to provide computer printouts to individual users in response to queries for up-to-the-minute reports on specific taxonomic groups. Once the data bank is well established query service can be provided to any user for a modest fee.

We welcome your reaction to the concept of the Botanical Type Specimen Register on the basis of this sample. Only with the backing of the botanical community can we continue to get the necessary financial support to carry on

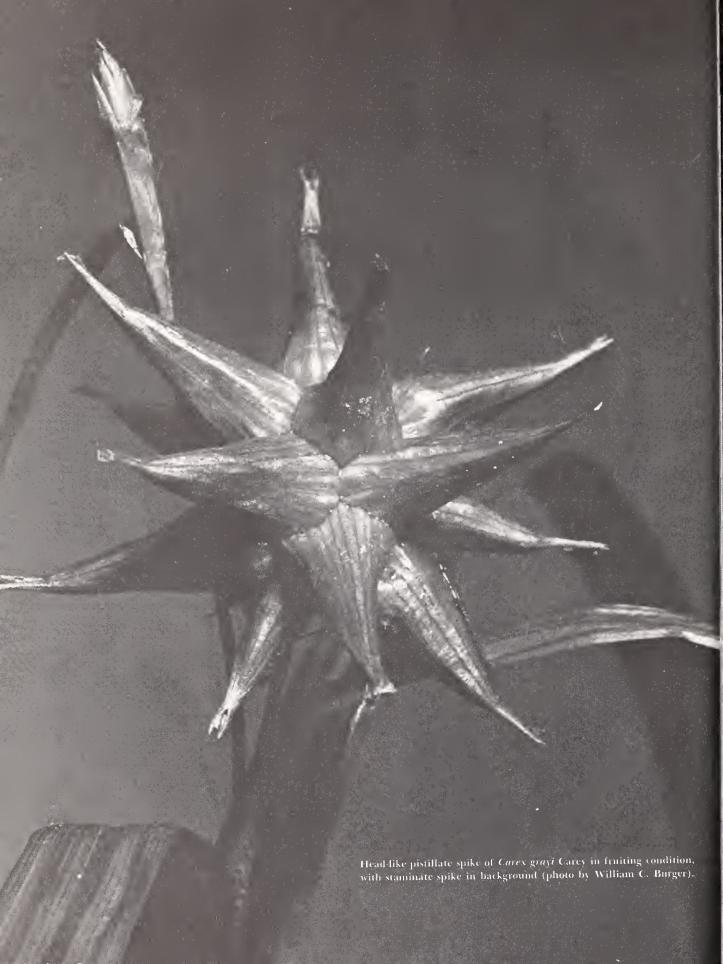
the work.

EDWARD S. AYENSU, Chairman Department of Botany 30 September 1972



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The Botanical Type Specimen Register

STANWYN G. SHETLER

Introduction

The Botanical Type Specimen Register is a computer-based system for recording information about type specimens of plant species and infraspecific taxa, which is designed to become a union registry of type holdings in the world's herbaria. It introduces a new dimension to the management of herbarium collections. Through the use of advanced information processing methods, critical data are compiled from the herbarium and library and merged into a common, machine-searchable file from which catalogs can be printed or special queries, defined by complex selection criteria, can be answered rapidly on demand. As a result, future taxonomic investigators will be able to learn the whereabouts of type specimens of particular concern to them and obtain answers to certain basic questions without painstaking research or timeconsuming travel or correspondence.

Stanwyn G. Shetler, Department of Botany, Smithsonian Institution, Washington, D.C. 20560; same address: Mary Jane Petrini; Constance Graham Carley (née Graham) (present address: 275 Collier Rd., Atlanta, Georgia 30309); M. J. Harvey (present address: Department of Biology, Dalhousie University, Halifax, Nova Scotia); Larry E. Morse (present address: Biological Laboratories, Harvard University, Cambridge, Massachusetts 02138); Thomas E. Kopfler.

The Type Register was conceived by Mason E. Hale, who organized a pilot project in 1968 while he was chairman of the Smithsonian's Department of Botany. This was one of several projects that Hale initiated as chairman to introduce electronic data processing (EDP) to collection management in the United States National Herbarium. (For a description of his automated system for recording specimen exchanges, see Hale and Creighton, 1970; the pilot Type Register project is described in Shetler et al., 1971.) At the outset, the author and Flora North America (FNA) personnel assisted in the development of the pilot system, and the project, though separate, has continued until the present to be associated closely with the FNA program (Shetler and Meadow, 1971). After launching the pilot effort, Hale, while continuing his involvement on an advisory level, passed the supervisory responsibility to the author, who continues to direct the work.

The project was initiated with special funds. In fiscal year 1969 and 1970, limited allocations of regular funds of the National Museum of Natural History were made through the Department of Botany, but regular budgeting did not begin until FY-71 (1 July 1970–30 June 1971) when the Museum organized a new, Museum-wide program in data processing and incorporated the Type Regis-

¹This is No. 70 in the Flora North America Report series.

ter as one of the charter projects. These projects are controlled by the respective departments, but the overall program is coordinated and managed by James F. Mello, Assistant Director.

The response to the several requests for participation during the pilot phase was excellent, showing general interest among botanists and convincing Hale and others at the Smithsonian of the potential value of a type-specimen register and of the botanical community's willingness to collaborate to the fullest extent possible in creating a register along the lines conceived. From the preliminary experiments much was learned about the logistical problems and the costs and manpower requirements of network data banking. The Smithsonian necessarily is concentrating present operations on its own type collections of about 65,000 specimens. The system is designed, however, to accept data from any institution at any time, and as long as the inflow remains on a small scale, data from other institutions can be added to the central file by the present staff more or less as they are received. It is hoped that as interest in collaboration grows support commensurate to the interest will be forthcoming both for the central operation and for participating institutions.

The second part of this paper represents the first published installment of the Type Register. It is a provisional union catalog of the type specimens of the genus *Carex* on deposit in ten major American herbaria (see "Contributing Institutions") and a concrete example of cooperative data banking.

In FY-72, the year that ended on 30 June 1972, the Type Register project finally was put on a solid footing. Midway through this year it was possible for the first time in the four-year history of the project to staff adequately by employing three fulltime persons (two assistant editors and a data conversion operator) and also to have adequate funds to process regularly. Prior to January 1970, the pilot project was carried on intermittently as funds were available by one to three part-time employees, and from January 1970 to December 1971 the project advanced on a more or less continuous, operational basis with the assistance of one, two, and occasionally three full-time persons, the number depending again on available money. During the pilot effort, the computer analysis, programming, and file processing were done on a part-time basis, as needed, by personnel of the Smithsonian Information Systems Division, and since the project has become operational this work has been performed on a similar basis by FNA personnel so as to keep the Type Register system compatible with the FNA system.

From the beginning Hale planned for the inclusion of data from an indefinite and constantly growing number of other institutions and actively sought such collaboration. In one test of the feasibility of multi-institutional input, he distributed a computer-printed set of 52 cards, representing a card catalog of the National Herbarium's complete type holdings in the genus Mimulus (Scrophulariaceae), to each of 50 large herbaria in the United States and abroad and solicited their cooperation in providing similar data from their own type collections, if any, of Mimulus. A second major test involved sending a computer-printed card catalog of the National Herbarium's complete type holdings in the family Lamiaceae (Labiatae) to the University of California, Los Angeles, where Carl Epling's extensive type collections in this family are deposited, and later to the Missouri Botanical Garden and the New York Botanical Garden. All three institutions cooperated in providing data from their own collections of types in this family. The latter two institutions continued thereafter to collaborate as much as possible on other taxonomic groups, and, apart from the Smithsonian itself, they have been the institutions with the greatest involvement in the Type Register project.

Certainly, no claim to completeness can be made for a catalog that concerns a single genus and only one percent (10/1000) of the world's public institutional herbaria (Shetler, 1969). "Usefulness" is the pragmatic criterion for compilation and publication of the Type Register, however, and usefulness is dependent on critical mass, not absolute coverage. Clearly it is unrealistic to think that the Type Register could ever achieve absolute completeness, registering all type specimens for all published taxa in all of the world's herbaria, and the Register has not been conceived on this false premise. The Register is being created on the assumption that some information is better than no information and that a catalog of ten type collections is more useful than a catalog of one type collection. Although it must be admitted that the coverage is very uneven among the ten herbaria contributing to the Carex Catalog, for example,

nevertheless this Catalog tells us more than we have ever known before about the *Carex* type collections of the participating institutions and provides a solid framework to which new information can be added as it becomes available from these or any other institutions.

The concept of a type register is not new. Already in the mid-1930s, A. S. Hitchcock of the Smithsonian Institution, in his capacity as chairman of the Committee on Nomenclature of the Botanical Society of America, coordinated the compilation of information on the location of type specimens. Lists of authors of new names, indicating the major group (s) of plants they described (e.g., phanerogams) and the herbaria where they deposited their types, were compiled (Hitchcock et al., 1934, 1935). Other members of the Committee in 1934 were L. R. Abrams, J. C. Arthur, A. W. Evans, J. M. Greenman, M. A. Howe, E. D. Merrill, F. W. Pennell, and C. L. Shear. "The Committee is not attempting to decide what specimens are types nor to determine the identity of types," Hitchcock wrote in 1934; "it is attempting only to aid botanists in their search for types." His words can only be reiterated in the present context. Other recent efforts to catalog types have been made in connection with specimen-data retrieval projects in the herbarium or museum (e.g., Beschel and Soper, 1970; Collier, 1971; Crovello, 1972).

Information processing technology has advanced far since the days of the first applications in biology, when the limitations of the computer led to some unfortunate consequences, as thoughtfully analyzed, for example, in reviews by Wood et al. (1963) and Rollins (1966) of some early applications in plant taxonomy. We make no pretense of having avoided all the pitfalls cataloged by these reviewers, but we have tried to make good use of their advice. If we have learned anything so far, we have learned that no one can design the perfect system on the first trial. Every operational system is at the same time a pilot system for an even more advanced and refined, next-generation system.

Acknowledgments.—Without the inspiration and genius of Mason E. Hale the Type Register would not exist. While chairman of the Smithsonian's Department of Botany (1967–69), he had not only the foresight to inaugurate this computer application but also the fortitude to persist with administrative support for it when others did not

always share his vision nor his optimism for its potential value. The continuing support of Richard S. Cowan, former Director, National Museum of Natural History, and of Hale's successor as chairman, Edward S. Ayensu, have been crucial in puting the project on a stable footing. The Assistant Director, James F. Mello, and his assistant, David Bridge, deserve much credit for laying the budgetary groundwork that has brought the project to its present viable and relatively healthy state, and for facilitating its administration. From his vantage point as overseer of all EDP projects in the National Museum of Natural History, including the Type Register, Mello has provided stimulating and wise counsel, as well as constant encouragement and help.

Many curators have contributed in some way to the development of the Type Register thus far, especially in the course of the multi-institutional data-collecting experiment with Minulus, conducted by Hale, and their cooperation is hereby gratefully acknowledged. Those curators and their assistants who participated directly in the compilation of data for the Carex Catalog are listed earlier as "Collaborators." Among them, Hale, Irwin, Lewis, and Nicolson have taken a dedicated personal interest in the success of the Type Register from the beginning and have in effect constituted a standing advisory editorial board. In their respective institutions, they have played a role in all of the data compilation that has been done for the Register thus far, regardless of the taxonomic group. As a Smithsonian colleague, Nicolson has been a steadfast supporter of the project, showing deep interest in the work itself and sharing his time and seemingly inexhaustible nomenclatural knowledge willingly and unselfishly whenever there has been need, which often has been daily. John H. Thomas raised enthusiasm for the Type Register to a new level when, as a result of his collaboration on the Carex Catalog, he began to ask specialists borrowing from the collections he curates to compile data for the Register from type specimens loaned to them and to affix an annotation label of his own design to each, which reads, "The written information on this specimen has been abstracted for the TYPE REGISTER PROJECT by _____

With respect to the editorship of the Carex Catalog, Carley, who served the FNA program and the Type Register project from December 1969 to April 1971, and Petrini, who is the senior technical editor of the Type Register project, assisted Shetler with the day-to-day technical editing. Harvey and Morse assisted him with the botanical editing during the year that each spent working at the Smithsonian on the FNA program—1969-70 and 1971-72, respectively. Harvey provided botanical supervision of the data-capture operation during the initial input of Carex records from the Missouri Botanical Garden, New York Botanical Garden, and the U.S. National Herbarium. He directed the two-week, on-site input effort at the New York Botanical Garden in June 1970, which involved other genera besides Carex. Cynthia N. Ostroff of the Index Nominum Genericorum project assisted part-time at the Smithsonian in the technical editing of the Carex data from Harvard University. Marilyn Andraeson helped with the data compilation at the Missouri Botanical Garden, while similar assistance was rendered by Zella Ellshoff, Robert Helliwig, and Gail Johnson at the New York Botanical Garden.

At least part of the *Carex* Catalog was examined in near final form by Frederick J. Hermann of the U.S. Forest Service Herbarium at Fort Collins, Colorado, and Tetsuo Koyama of the New York Botanical Garden, specialists on *Carex* and the family Cyperaceae, respectively. Although both provided helpful comments, they should not be held responsible in any way for the final Catalog, because neither was able to devote the enormous amount of time that would have been required to check the file authoritatively. This responsibility rests with the editors and collaborators.

Several specialists at the New York Botanical Garden have provided data to the Type Register for groups other than Carex: Caroline Allen (Lauraceae: a few records of selected taxa), Patricia Kern Holmgren (Brassicaceae: Draba, Thlaspi), Tetsuo Koyama (Cyperaceae: a few records of selected taxa), John T. Mickel (Schizaeaceae: Anemia subgenus Coptophyllum and segregate genera), and Ghillean T. Prance (Chrysobalanceae, Dichapetalaceae). (See also "Statistical Summary of Type Register Contents.") Holmgren has been the one chiefly responsible for coordination at the working level of the New York Botanical Garden's col-

laboration in the Type Register project. Mildred E. Mathias, Director, Botanical Gardens-Herbarium, supervised the compilation of data on types of the family Lamiaceae at the University of California, Los Angeles, early in the project. Bruce MacBryde assisted in the compilation of the data for this family and for the genus *Mimulus* at the Missouri Botanical Garden. Other botanists who deserve mention for playing a part in the project at the Smithsonian are Amy Jean Gilmartin, Monterey Peninsula College, Monterey, California, and Miloslav Kovanda, Czechoslovak Academy of Sciences, Prague, who spent the years 1969–70 and 1970–71, respectively, with the FNA program.

The FNA Editorial Committee (John H. Beaman, Walter H. Lewis, John McNeill, John T. Mickel, Peter H. Raven, Stanwyn G. Shetler, Roy L. Taylor, John H. Thomas) has taken a deep interest in the Type Register project from the outset and provided financial and material support through the FNA program, as well as invaluable advice and encouragement. A report on progress has been given at every meeting of the Committee since the Register was organized, and much time has been devoted to evaluation of the present and future development of the Register.

The pilot processing system was designed by Reginald Creighton, Manager of Information Storage and Indexing, and programmed by Willard Handley, both of the Smithsonian's Information Systems Division. Creighton worked closely with Hale to develop the pilot system, which served the original purposes well, and the Type Register would not exist if it had not been for Creighton's pioneering insight and dedication. When the project became more closely associated with the FNA systems effort, Harriet R. Meadow, Systems Development Manager of FNA, designed the present operational system in its general outlines. Kopfler has been responsible for the detailed design and

FIGURE 1.—Stages in the preparation of records for the Type Register: a, Constance Carley checks nomenclatural data in the Gray Herbarium Card Index; b, Mary Jane Petrini enters corrections into the computer via a remote typewriter terminal connected by telephone (photos a and b by Walter G. Peter III); c, type specimens of the genus Viola (Violaceae) are examined and discussed with respect to the problems of recording them in the Type Register by (left to right) M. J. Harvey, John T. Mickel, and Harriet R. Meadow in the herbarium at the New York Botanical Garden (photo by New York Botanical Garden).







programming and for the maintenance and querying of the machine files. Morse wrote the COBOL program for concatenating the data into the paragraph form used in the Carex Catalog. Meadow's analysis and design resolved some basic unforeseen problems that arose after using the pilot system for a time, and her efforts resulted in the operational system that continues to serve very well. She has played a crucial role in the success of the project and continues to provide advice and guidance on matters of systems development. Several botanists who also have experience with computer applications have provided valuable advice from time to time: Theodore J. Crovello, University of Notre Dame; David J. Rogers, University of Colorado; and James H. Soper, National Museum of Natural Sciences, Ottawa.

Technical help in editing and capturing data has been given by the following persons, listed in the order in which they were hired, some as employees of FNA and others as employees of the Type Register project: John Bolduc, Nancy Howard, Barbara Bryant, Grace Rickard, Edna Montford, Mary Beth Moore, Barbara Halter, Gudrun Christenson, and Rita Abessinio. Julia E. Taylor and Liliosa Mangosing Evangelista have been cheerfully indispensable in discharging the myriad clerical and administrative tasks without which a project of this nature could never succeed.

In addition to receiving regular budgetary support on an increasing scale from the Smithsonian Institution, the Type Register project has been funded in part by the National Science Foundation through grants made to the American Institute of Biological Sciences (GB–8441, GN–812, GB–26173) and to the Smithsonian Institution (GB–31715 and contract C–720) for the FNA program, the Smithsonian Research Foundation (grants Sg0621054, Sg0621054/C1 and Sg0621054/C2), and the Smithsonian Office of Systematics.

Concept and Purpose of Type Register

Perhaps 200 million specimens are on deposit in the more than one thousand public herbaria in the world, and scattered among these vast collections may be as many as 4 million type specimens (Shetler, 1969; Shetler et al., 1971). North American herbaria alone probably contain more than a halfmillion types. Likewise the original publications describing new plant taxa and establishing their types are myriad and scattered through the world's literature. The taxonomist who wishes to make a scholarly study of a group of species, including an investigation of their typification, faces the formidable task of locating the relevant original descriptions and type specimens. Fortunately for him, two standard indices, Index Kewensis (Rouleau, 1970; Meikle, 1971) and the Gray Herbarium (Card) Index (Shaw, 1971), and various standard library catalogs and union listings are readily available to guide him to the pertinent literature. No similar indices exist, however, to guide the taxonomist to the pertinent type specimens. To find types he first must search the original literature case by case for indications or clues and then, through travel or correspondence, continue his search in herbaria among the specimens themselves. Even with the original descriptions in hand the specialist often faces great difficulties in trying to determine where the types are deposited. The modern literature still shows an astonishing lack of standardization in the way types are designated and their herbarium deposition indicated.

What the taxonomist needs, therefore, is a finder's guide to the type holdings of at least the world's major herbaria. This guide should be indexed primarily by taxon but also cross-indexed several ways, and it should include citations of the original publications and basic collection data as provided by the specimen label and/or published description. Such an index ultimately would incorporate and enhance the functions of Index Kewensis and the Gray Herbarium Index. This type of registry could become effective at once for newly published taxa if taxonomists would agree to require registration of all new taxa and type depositions at the time of publication as a condition for effective publication. Furthermore, the registry, if computerized, would be the logical central repository for specialists' annotations on typification, especially with respect to lectotypification and neotypification. Plant taxonomy desperately needs an effective central place and straight-forward procedure for registering lectotypes, neotypes, and specialists' conclusions about other kinds of types.

The Botanical Type Specimen Register, as conceived, therefore, is to serve primarily as a finder's guide for locating type specimens. The secondary function, however, is to serve as a guide to the

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original descriptions of the registered taxa and to provide collection data for the registered specimens. The specimen information necessarily is organized by taxonomic name. Thus the file is not purely a specimen register; the data are organized so as to constitute a three-level hierarchy: taxon, collection, specimen. A full entry (record) in the Register is, therefore, a synthesis of data from the herbarium and the library which cannot be completed without examining the original specimen and the original publication, as well as other specimens and publications as necessary. A record can be initiated with data from either the herbarium or the library and supplemented later by data from the other. To a degree this happens naturally as other institutions contribute to the initial record, but in any event years may elapse before all records of a given taxonomic group can be brought to relative completeness.

The development of the Type Register ultimately involves three stages: registration, verification, and validation.

The immediate objective is to initiate the computerized working file without getting bogged down in time-consuming researches to resolve challenges of the validity of the data. Such scholarly research is the province of specialists who may need years to resolve particularly difficult nomenclatural and typification questions, and the preparation of the kind of index envisaged here could never be accomplished if all questions had to be answered first and the compiled data had to be "perfect." In the first stage, therefore, the primary goal is to record or register the facts more or less at face value as they are given by the available primary and/or secondary sources. Research and editing are kept to a minimum except where obvious discrepancies can be resolved without extensive investigation. The editing is restricted largely to formatting the data according to the technical standards of the processing system, and to standardizing the use of names, titles, and terms in key fields.

The second stage is to *verify* all data by firsthand examination of the pertinent specimens and original publications. When the data are compiled in the first place from the original sources expressly for the Type Register, verification is accomplished in the process of preparing the data for registration, and the two steps merge into a single operation. When a secondary source such as an existing

card file or published index is used, however, there is a need to verify the information subsequently by checking the specimens and original descriptions. Two examples will illustrate. (1) Index Kewensis and the Gray Herbarium Index constitute indispensable secondary sources of references to original publications, but the original publications themselves must be examined in order to verify both the existence of the descriptions and the accuracy of the citations. (2) Present-day revisions and monographs customarily indicate where the key type specimens are deposited, but this information is not considered verified, for purposes of the Register, until the specimens have been seen in the process of compiling the data for the Register, because the data must be verified in the context of the specific requirements of the Register. This is a critical point.

It should be emphasized here that a taxonomic revision or monograph, no matter how carefully and authoritatively executed, constitutes a secondary source of information for all taxa treated except those being described to science for the first time. In fact, as synthetic works, these treatises often present only the barest details on type specimens, especially for previously described but even for newly described taxa, and the author's own nomenclatural interpretations frequently are not clearly distinguished from the original data. It is not unusual, for example, to discover in the process of verifying a record in the Type Register that the author of a revision or monograph, in identifying what he believed to be the holotype, unwittingly designated a lectotype or even a neotype by strict application of the international rules of botanical nomenclature. Therefore, except as a reference to the original sources, for which it is of course invaluable, the monographic treatise has proved to be a disappointing starting point for compiling the Type Register; it seldom provides all necessary data and often presents summaries of the original facts which are telegraphic to the point of being imprecise or even inaccurate. On the other hand, the monographic treatise is indispensable in the third or validation stage, because it deals in a systematic way with the typification of the taxa covered and establishes authoritative precedents that must be considered in the interpretation of the information in the Type Register. Furthermore, short of having all the original references and specimens in

hand, the monograph, which brings together all the data for a taxonomic group into one place, is by far the best *single* source of data for the given group.

Verification is not a simple procedure that can be accomplished once for all time but an involved, virtually never-ending process, which seems to expand in direct proportion to the number of specimens and publications examined. Comparison of the original description with data from one or more specimens rarely can be made without uncovering at least minor discrepancies that must be reconciled. As types from additional herbaria are registered it often becomes necessary to reexamine the original publication and secondary references again and again to resolve new discrepancies, and such discrepancies frequently multiply faster than they can be resolved as publication after publication is consulted. Gazetteers, atlases, biographies and biographical dictionaries, personal fieldnotes and letters, and even new correspondence with current specialists, in addition to the obvious taxonomic treatises and reference works, may be employed eventually in the course of trying to verify the data of an entry in the Register.

Apart from the facts themselves is the matter of interpretation and judgment. The compilation of any highly condensed, formatted, and standardized file of data such as the Type Register is bound to involve much interpretation of fact and judgment of what to include and what to exclude. The computer imposes the additional problem of judging how best to format and standardize the data for search and retrieval. As new data are provided or brought to light, there is a constant need to reevaluate prior interpretations and judgments, and this in turn may require reexamination of previously consulted literature and specimens. The problem is one not only of accuracy and completeness within a given record but also of consistency among records. How the geographic information is standardized in the record for Taxon A, for example, has a direct bearing on how the geographic information is standardized for Taxon B, and decisions made for the first case without knowledge of special problems to be faced in the second case may have to be reevaluated and changed when the two records are considered together. In short, there is no a priori way to set standards for all time.

The long-term goal of the third and ultimate stage in the development of the Type Register is to validate the data according to the rules of the International Code of Botanical Nomenclature (ICBN; Stafleu et al., 1972) and thereby to establish the Register as a wholly reliable, authoritative index of types of plant species and infraspecific taxa. Validation involves typification, specifically the designation of kind or status of type, and such matters as rank, priority, synonymy and homonymy, authorship, and orthography. Up to a point, the records can be validated by any botanist or technical person skilled in the strict application of the provisions of the ICBN, because many of the problems are purely technical or legal. Indeed, experience with the Type Register has proved that a trained technical editor frequently makes decisions more consistent with the ICBN than the specialist, at least insofar as the objectives of the Register are concerned. Such technical validation, while it greatly increases the reliability of the data, nevertheless is without the force of authority that can be gained only through the sanction of the taxonomic authorities themselves. As in all taxonomic research, many of the questions that arise regarding typification have no absolute answer but require good judgment by an experienced specialist on the basis of all available evidence, and no amount of technical expertise could suffice. This type of authoritative validation is needed in the long run if the Type Register is ever to take its place as an indispensable and thoroughly accepted tool of plant systematists, and it is hoped that the specialists will cooperate in validating the information in the Register as it becomes available group by group in preliminary form. In the short run, however, the most that can be achieved is some degree of technical validation. The important point to stress here is the dynamic state of the file which can be updated at any time to accord with current knowledge and understanding.

Like verification, validation is a continuous process that never really ends, because the light of new information often requires important reevaluations and appropriate changing of the computer file. At the same time, a basic threshold can be achieved. A record is considered verified at least on an initial basis once the original description and all registered specimens have been seen in person by someone compiling and editing data expressly for the 1

Register. Likewise a record is considered validated at least initially once the designation of types has been worked out in accordance with the *ICBN* expressly within the framework of Type Register specifications and format. These thresholds must be attained before the second and third stages of development can be said to have been achieved on a minimal basis. Authoritative validation as described above, on the other hand, will require the input of many specialists in the years to come and is a very long-term proposition.

The three stages of development may be summarized as follows:

Stage 1. Registration.—Creation of the initial file, which involves basic standardization of citation and geographical fields.

Stage 2. Verification.—Editing file against primary sources in the light of the accumulated data.

Stage 3. Validation.—Shaping the Register as an authoritative tool on typification, fully in accordance with the *ICBN*, by getting input from specialists and by incorporating information on lectotypification and neotypification, as well as other critical annotations.

In practice, registration, verification, and validation certainly are not sharply delimited phases and often merge into each other as a single process. Once the original description and specimens are in hand one attempts to accomplish as much of the entire three-stage process as possible. Verification and validation, in particular, tend to overlap; it is in fact impossible to accomplish the one without to a degree accomplishing the other. From the point of view of the daily operation, however, registration, verification, and validation represent distinct working stages in the creation of the computer data base, involving different procedures and personnel. Editorially, each stage results in a more refined, reliable, and authoritative data base. In the first stage, the data can be compiled and registered entirely from secondary sources, if necessary, although this is not recommended, but neither verification nor validation can be accomplished without consulting the original sources. Regarding the operational distinction between verification and validation, it should be realized that a technical person may be quite competent to verify the accuracy of the data but not to validate the type designations even with the original sources in hand. Ordinarily, technical editors are responsible for verification,

and only when professional botanists or other specialists skilled in the application of the *ICBN* perform this function is it possible to perform the validation function at the same time.

The present computer file of some 13,000 specimen entries, constituting the entire Type Register, is a registry of largely unverified and unvalidated records of apparent or presumptive types, and for the next several years, at least, effort will continue to be concentrated on the rapid compilation and input of similar preliminary data from many other taxonomic groups and institutions, starting with the Smithsonian's own type collection. The strategy is to register the greatest number of taxa and specimens in the shortest possible time so as to achieve quickly a critical mass of data for producing catalogs and answering queries. Clearly the usefulness of such a data base will be directly proportional to its taxonomic and institutional comprehensiveness. Unless efforts to verify and validate the data are kept to an essential minimum as new records are being processed, there is little chance that a comprehensive data base can be created in the foreseeable future. The manpower and resources simply are not available at present for the massive searches in the herbarium and library that would be required to bring every new record to the Stage 2 or Stage 3 level of refinement as it is being entered into the file. To a large extent, therefore, the Stage 1 Type Register will have to be verified and validated through use, through feedback from the specialists who discover its shortcomings in the course of their research.

Under no circumstances is the Type Register being used or is it intended to be used as a place to designate lectotypes and neotypes and thereby to set nomenclatural precedents. If the Register is ever to be used in this manner, which as indicated earlier may prove desirable eventually, the taxonomic fraternity will have to make a conscious decision to do so.

When the scope of the task is considered, it is not surprising that no one has attempted to compile a union catalog of type specimens before now. The task can be cut down to size, however, because relatively few of the world's public herbaria are large enough to have a significant concentration of type specimens. Only about a score of the world's herbaria, for example, contain over two million specimens each, and a published index, including

literature citations, to any one of these collections would be enormously useful in itself. Each new institution to be added to such a base would enhance the catalog greatly and move it one step closer to the goal of a worldwide union registry.

The U.S. National Herbarium is one of the score of major herbaria with more than two million specimens, and its type collection of 65,000 or more specimens certainly constitutes a significant initial data base. Furthermore, not only is this type collection separate from the main herbarium and easily accessible, but it also has an associated file of cards on which are recorded pertinent data from the original publication (see "Source of Data"). Without this large, ready-made card file and without computer technology, which permits the creation of a union register on a much more flexible and dynamic basis than would otherwise be possible, the Type Register doubtlessly would never have been conceived or started. The Botanical Type Specimen Register is in the first instance, therefore, an index (catalog, register) of the U.S. National Herbarium's own type collections. The thousands of man-hours that have gone into the creation and maintenance of the National Herbarium's type collection and card file have paid off, of course, to the many who through the years have used the type herbarium on the Smithsonian premises. By computerizing this information the Smithsonian's Department of Botany now makes it possible for taxonomists at large to benefit from the accumulated data and enormous manpower in vestment.

Scope of Register

The Register is designed to handle taxa typified by specimens, namely, taxa of the rank of species or below, and it encompasses all infraspecific taxonomic levels recognized by the *ICBN*. In the future, modifications in design may be desirable if not essential to accommodate cases in which the type is not a specimen but a description or a figure. For the present, however, the object is to register specimens, and for this reason data collection usually begins with the specimens and proceeds to the literature rather than the other way around. There are good reasons for arguing on the one hand that registration should proceed from the specimen to the taxon and on the other hand that the process

should be reversed, proceeding from the taxon to the specimen. No doubt this publication will stimulate debate on these alternatives; meanwhile, it should be made clear that primarily the first approach is being taken.

With one exception, only the original names of newly described taxa, i.e., taxa being described to science for the first time, are included. The one exception is a wholly new name for a previously described taxon necessitated because all other possible names and combinations would violate the international rules. New combinations involving previously published epithets are excluded rigorously insofar as they are known to be combinations; in such cases, only the basionym is entered into the Register. In one sense, therefore, the Type Register is a basionym file. This approach has been taken because it is the only feasible way in the foreseeable future to create a stable file with fixed points of reference. Eventually, viewed in the longest terms, it will be necessary to link the Type Register to a much vaster name list that shows all possible synonymy connections among basionyms and combinations and thus makes it possible to trace the nomenclatural history of a particular species, for example, from modern usage back to original usage. This is far too much to expect of the Type Register in itself, however, and for this reason the design of the Register allows for no synonymy except for orthographic variants. If a taxon originally was published under a generic or specific name with a spelling that later was corrected, then the original spelling is indicated in a special field, while the accepted spelling is shown in the main taxon field; for example, many species have been published in the genus Penstemon under the spelling "Pentstemon," and this spelling is indicated in the orthographic synonym field, as necessary. Without this approach, the same genus would alphabetize in different parts of the file (e.g., Aplopappus vs. Haplopappus).

Only validly published names are included, but the names need not be legitimate, as defined by the *ICBN* (see also McVaugh et al., 1968).

Taxonomically and geographically, the Register is limited only by the availability of data and operational resources. The present machine file includes only vascular plants and primarily flowering plants, but it could be expanded at any time to include cryptogamic groups if the data and the

resources to input the data, especially personnel, were available. The geographic scope already is worldwide because the initial source of most records, the U.S. National Herbarium's type collection, is worldwide in scope although particularly strong in New World areas. The input is further biased geographically at present by the fact that the other herbaria which have cooperated thus far on the Register also are North American institutions with principally New World collections (except Arnold Arboretum).

Inclusion of type photographs has been suggested several times, but so far this has not been done because they present special problems requiring careful study before the system can be modified to accommodate them. Whereas type specimens are unique and, even in the case of isotypes and syntypes, are distributed to a relatively limited set of herbaria among the total, type photographs are not unique, and in theory every herbarium can have a photograph of any type. The Register soon could be overloaded with references to photographs, and no purpose would be served. While there is a clear need, especially on the part of floristic workers who may be able to satisfy their requirements with photographs and thus avoid a massive borrowing of type specimens, for a central index of negatives on deposit at major centers from which type photographs could then be purchased, this problem calls for separate attention.

To an extent, the same reasoning applies to type fragments because many institutions potentially can have fragments of the same specimen. A type fragment has no standing in the ICBN unless it can be interpreted as a formal type of some kind (e.g., isotype), and most fragments cannot be dignified by such interpretation. In the modern era when travel and communication are easy, making the remotest corners of the earth accessible, the informational value of the type fragment in one's own herbarium has diminished greatly because the type specimen itself can be borrowed or examined by personal visit. Thus only in the case of types that have been destroyed or of types that for political or other reasons are still inaccessible can importance be attached to a register of information on the whereabouts of type fragments. In other words, the taxonomist wants to know, "Where can I find a type specimen?" not "Where can I find a type fragment?" The latter question will interest him only if all efforts to see a type specimen fail or prove impractical. For these reasons, type fragments have been registered sparingly in the present file and only when the circumstances seem to warrant doing so.

Lectotypes and neotypes present a special problem that cannot be handled properly with the current system design. The system allows for only a single bibliographic citation, namely, the citation of the original publication where the taxon was first described and the name proposed. In cases of lectotypification or neotypification, however, it is necessary to cite also the second, later reference where the lectotype or neotype was designated. The problem has been largely ignored in this initial phase because lectotypification and neotypification cannot be documented properly without the direct participation of specialists. Identification of lectotypes and neotypes is part of the Stage 3 validation process described earlier, and by the time this level of documentation is possible the system will be modified to include a separate file, linked to the basic file, for recording lectotypes, neotypes, and other pertinent taxonomic or nomenclatural annotations. Such a file for "remarks" will provide a way of recording the names of authorities who have validated the data.

A word is necessary about the relationship of the Type Register project to the *Index Nominum Genericorum* (*ING*) project (Cowan, 1970). The object of *ING* is authoritative typification of all generic plant names. Thus it deals with genera, not species, except for type species, and it is not concerned with type specimens or collection data of any kind. Emphasis is placed on achieving at once, before input, the level of validation that the Type Register is expected to achieve only in the long run. The Register, which is not concerned with the typification of genera, and *ING* are complementary, therefore, and do not duplicate each other in any way (see also p. 16).

With respect to Flora North America, the closest links are maintained between it and the Type Register project on the one hand and *ING* on the other hand, to ensure that the work of each project will complement rather than duplicate the others.

Procedures and Standards

Source of Data

The principal source of data at this stage is the permanent card file associated with the type collection of the U.S. National Herbarium (US). The card records are converted into machine-readable form genus by genus in alphabetical order. During the pilot phase cards were pulled from the file by family (e.g., Scrophulariaceae), but this approach is impractical for the file as a whole, which is arranged alphabetically by genus. While that approach was being taken, the cards were being compared with the specimens in the type collection, which are arranged systematically (modified Englerian sequence), prior to input. Now that an alphabetical rather than systematic approach to the file is being taken the specimen-comparison step is being postponed until the whole file is in the computer and can be sorted systematically by family.

Curators of the U.S. National Herbarium have followed the practice of segregating type specimens from the general collection since the early part of the present century. The practice was first established about 1918 by then-curator Paul C. Standley. At the same time an associated card file was started to supplement the specimen data with information from the literature. The file includes a card for every taxon (species, subspecies, variety, form) represented in the type collection, and generally the responsible curator has had the original publication in hand while preparing the card and the standard folder for filing the type specimen (s). Each card includes the original taxonomic name (basionym in cases of later transfer), author, original reference, basic collecting data, and designation of kind of type. To re-create this file today from the specimens and the literature would require at least 10 and more likely 20-30 professional manyears, and there is no reason to suppose that the file could be re-created with any higher professional standards or greater degree of accuracy on the average than the first time. In short, it is scientifically sound as well as eminently practical to create the preliminary edition of the Type Register from the Smithsonian file as it stands.

Of the 65,000 specimens in the US type collection, about 55,000 are types of phanerogamic species

and infraspecific taxa, and the other approximately 10,000 are types of cryptogamic taxa—ferns, mosses, and lichens.

Other institutions can contribute to the Type Register in any of a number of ways, as explained in the next section. Basically, there are two ways: (1) annotation of a printout listing records already registered in the machine file, and (2) submission of completed data forms or some equivalent procedure for new records not presently registered in the machine file. These are complementary procedures which must both be used. Institutions with ready-made card files like the Smithsonian's are in the best position to contribute in a significant way quickly, and their contributions will spare the smaller herbaria from repeating costly bibliographic research that already has been done somewhere else. The cumulative Register provides a basis for checking rapidly for isotypes and other "duplicate" type material, leaving bibliographic research to be performed only for those cases where new taxa are to be added to the Register. In other words, to conserve effort maximum advantage should be taken of the existing file in the process of adding new data, especially bibliographic data, and of course the larger the machine file becomes the greater can be the economy of scholarship on the part of newly collaborating herbaria.

Monographs and the personal manuscripts or files of monographers are obvious sources of authoritative data for the Register and have been used in a few instances, although there are some distinct disadvantages in using the monograph as the starting point (see p. 7). Future monographers should register data routinely for type specimens of new taxa prior to, or simultaneously with, publication. Likewise, it is hoped that graduate students in plant taxonomy will be advised to submit data on type specimens examined by them in the course of their research.

For every specimen registered in the file, a code is appended at the end of the record which indicates the source of the data according to a broad classification of source categories, summarized later under "Data Source Code."

INSTRUCTIONS FOR CONTRIBUTORS

Any herbarium interested in contributing to the Register is advised to consult with the staff at the

Please type. Enter new names only. *Essential fields, information must b	e given.
1. FAMILY*	
2. GENUS*	
3. SPECIES*	
4. INFRASPECIFIC TAXON (Indicate rank: ssp, var, svr, for, sfm)	
5. AUTHOR(S)*	
6. CITATION* (Cite periodicals and serials according to standards of B-P-H.)	
7. COLLECTOR(S)*	
8. COLLECTION NO. 9. COLLECTION DATE (Indicate whose series if not collector's series.)	
LOCALITY: 10. COUNTRY* (Use modern name and cite original as follows: Ethiopia ("Abyssi	nia").)
11. STATE, PROVINCE, DEPARTMENT, OR EQUIVALENT	
12. COUNTY OR EQUIVALENT	
13. TOWN OR LOCAL REFERENCE (Place important words first and omit unnecessary words.)	
SHEETS: 14. HERB. ACRONYM(S)* 15. SHEET NO(S). 16. KIND(S) OF TYPE(lst	s)
17. REMARKS (If more than 2 sheets, indicate to which sheet remarks apply.)	
Note: For additional sheets, continue in "Remarks"; for additional collections, syntypes), continue on back.	tions
Source of information References checked:	
B-P-H Gray Card Index Index Kewensis Other?	
Information provided by: Date	

Smithsonian well in advance of initiating a project so that a compatible way of compiling data can be devised before the first record is collected. At present the Type Register staff has its hands full with the internal Smithsonian file but will do its best to cooperate with other potential contributors to set up procedures for submitting data. The most efficient way of collaborating under present circumstances is to submit the records on the standard data form (Figure 2) to the Smithsonian for processing, but with adequate planning it will be possible for another institution to convert its own data into machine-readable form in-house before submitting the data to the Smithsonian and thereby to save time and effort in the overall process, at least where large herbaria are concerned. Complete records, i.e., with all essential data present, submitted by other institutions are placed in the queue and processed in due course as time permits. Incomplete records, particularly those without proper bibliographic citations, are set aside in an inactive file where, for lack of staff to complete them, they may remain indefinitely. Potential contributors should keep in mind, therefore, that any effort that falls short of providing complete records risks becoming a wasted effort.

A collaborating institution should always work from the current catalog in the Type Register, if one exists, of the genus or other taxonomic group concerned. The Carex Catalog, for example, provides a checklist of taxa already registered which can be used as a tool by any herbarium wishing to search its own collections for type specimens of this genus. Working catalogs for other registered groups can be provided at cost by the Smithsonian as they are needed. The purpose of this procedure is to reduce unnecessary effort on the part of both the compiler and the editor. In the system, all specimens pertaining to a given taxon are registered under a single entry, and thus there is one unit record per taxon. It is the editor's responsibility to prevent duplications of the same taxa in the first place and in the second place to discover and delete the occasional duplication that inevitably creeps into a file of the size and complexity of the Type Register. Individual compilers can do much to assist the editor in preventing duplications, however, by keeping themselves informed, through working catalogs, of the current status of the file, and by using procedures that minimize the chances of submitting duplicate information for taxa already recorded.

The procedural details will differ from institution to institution, but these general guidelines should be followed, unless other special arrangements have been made beforehand:

- (1) All new records—taxa new to the file—should be submitted on the standard data collection form (Figure 1) and according to the technical data specifications used by the Smithsonian. Be sure that the original name and not a later combination is being used.
- (2) All additions to existing records—supplementary publication or collection data, and collections or specimens new to the file-should be submitted as annotations to the appropriate records in a copy of the working catalog; or, if they are submitted on standard data forms or in a separate typewritten listing, each addition should be properly referenced to the record in the file to which it belongs. Care should be taken to distinguish between specimens that belong to a collection already registered in the file and specimens that introduce a new collection but to an already registered taxon. Both constitute additions but on different levels. The latter situation arises frequently when syntypes are involved, but slight discrepancies in collection data can easily be overlooked by the compiler, leading him to the conclusion that the former situation obtains. If the collection data recorded in the Register are not identical or at least reconcilable with the collection data of the specimen in hand, then the discrepancy should be resolved appropriately or the specimen excluded. In annotating the catalog, it is important to be sure that the additions are clearly associated with the proper collection where two or more collections are registered.
- (3) All proposed changes to existing information in the file should be submitted with documentation as annotations to the appropriate records in a copy of the working catalog; or, if they are submitted on standard data forms or in a separate typewritten listing, each addition should be properly referenced to the record in the file to which it pertains. Without documentation, proposed changes raise more questions than they answer and complicate the work of the editor.

The most common errors, experience has shown, are mistaking (1) a later combination for an origi-

nal name, (2) the type specimen of a variety or form for the type of the species itself, and (3) a syntype (or isosyntype) for an isotype. The second of these mistakes often turns out to be the explanation for the situation in which the specimen appears to have been collected after the species was described, i.e., the collection date is later than the publication date. An undetected name transfer may lead to puzzling discrepancies or to unnoticed duplication. Frequently, for example, a type collection passing under an undetected later combination becomes the basis for introducing a new taxon to the file, while at the same time the collection already is properly registered under its basionym.

A final note should be added about the use of the *Carex* Catalog or any similar working catalog in herbaria where type specimens have never been identified and segregated into separate folders or a separate collection. By means of the collector index, it is possible for curators who wish to begin segregating types to use such a catalog as a means of identifying type specimens within their herbaria which belong to collections recorded in the Type Register.

RECORD FORMAT AND CONTENT

The data content of a unit record in the Register was established largely according to the conventions long used for the US card file. With the US card format as a standard, the data form shown in Figure 2 was devised for use by contributors at other institutions. This form shows what fields of data should be included, distinguishing between essential and nonessential fields and indicating certain of the basic standards. The fields tagged as "essential" constitute the minimum number of data elements which the processing system is designed either to require or expect. From the botanicalcontent point of view, however, none of the fields should be regarded as optional. Every effort should be made by the contributor to provide data for all fields. Contributors can obtain blank forms at cost from the Smithsonian or use facsimiles.

Before input to the system, all records are edited to conform with the field-by-field technical specifications that have been established to standardize content and format in the system. A copy of these specifications can be made available to collaborators on request, but most contributors will not want to

be bothered with all of the technical details of the system. For purposes of contributing records, it is essential to know only the main conventions and standards that govern the content and format of the data fields. These basic standards are explained below by field, and contributors are strongly urged to follow them closely so that the work of the editor will be simplified. The rules of standardization have been applied more rigorously and consistently to the Carex Catalog than to any other part of the Register, and potential contributors are asked to study this Catalog carefully for specific examples of how standards have been applied to govern content, form, and style. Implicit in this Catalog are the answers to many specific questions about standardization which cannot be answered here. It should be kept in mind, however, that the typical edit format is different from the format of this published Catalog. In the typical format, the information is not strung together (concatenated) in paragraph form, but each field is labeled and printed by itself with room for annotations. Furthermore, certain fields of data (e.g., source code) have not been printed out in the Carex Catalog.

The reference works used most frequently in the course of compiling and editing data for the Type Register are cited in the bibliography. Some of these works have been adopted for editorial purposes as the standard references and authorities for verifying and standardizing new data during initial input. An "authority" (authority file) is an index, thesaurus, or dictionary of terms, names, or titles which is used to standardize some category of data, e.g., B-P-H (Lawrence et al., 1968) for titles of botanical periodicals. Published standards have been adopted as authorities whenever possible, but in some instances it has been necessary to begin creating authority files expressly for use in the Type Register project. A "standard reference" is an authoritative and reliable secondary source that provides the editor with a practical means of quickly verifying some category or categories of incoming data, e.g., a name index such as Index Kewensis or Willis' Dictionary of Flowering Plants and Ferns (7th edition, revised by Airy Shaw, 1966). Verification in this editorial sense of doublechecking in secondary sources is not to be confused with verification in the primary scholarly sense discussed earlier in connection with Stage 2 development of the Type Register (p. 7).

The International Code of Botanical Nomenclature is, of course, the final authority on all matters of typification and nomenclature. (The 1966 edition, prepared under the chief editorship of Lanjouw and Staffeu, has been used thus far, but the newer 1972 edition of Staffeu et al. is now available.) Of the essential desk-top references, the one most frequently consulted, perhaps, is the seventh edition of Willis' Dictionary. Also invaluable as general reference works are Stearn's Botanical Latin (1966) and Staffeu's Taxonomic Literature (1967). Though hardly desk-top references, Index Kewensis and the Gray Herbarium Index are indispensable, and the Type Register editorial staff is fortunate in having available to it an integrated version of the former and both the card and book forms of the latter. Insofar as possible, the same procedures and standards are being applied in both the Type Register project and the Flora North America program, so that the data bases will be compatible. Authority files developed especially for the one project are being used also for the other as appropriate.

The main editorial procedures that have been adopted to verify and standardize the ingoing data are summarized below field by field. Collaborators can do much to increase the reliability and standardization of their own data by using these same procedures in the process of compilation. The editorial burden is eased greatly when the editor knows in advance that the essential standards have been upheld consistently by the contributor.

Level 1—Taxon Data

The following fields of data are recorded only once each for every species or infraspecific taxon registered in the machine file because these data are unique for each taxon. Furthermore, the taxon is the unit record, and every taxon is entered into the file only once.

FAMILY.—The latest edition of Engler's Syllabus der Pflanzenfamilien (vol. 1: Melchior and Werdermann, 1954; vol. 2: Melchior, 1964) is the authority for the system of families with the exception that the accepted family name with a regular ending is used in all cases, including the eight cases where the Syllabus, following the traditional practice sanctioned by the ICBN (see list of Nomina Familiarum Conservanda), uses irregular names. These

irregular names with their adopted regular equivalents are: Compositae/ASTERACEAE, Cruciferae/ BRASSICACEAE, Graminae/POACEAE, Guttiferae/CLUSIACEAE, Labiatae/LAMIACEAE, Leguminosae/FABACEAE, Palmae/ARECACEAE, Umbelliferae/APIACEAE. The use of regular family names conforms with practice in the FNA program. Willis' *Dictionary* is used in conjunction with the *Syllabus* to determine the family to which a genus belongs.

GENUS AND GENUS SYNONYM.—Index Nominum Genericorum, insofar as it is completed, is the final authority for generic names, to determine their accepted spelling and whether they are validly published. Willis' Dictionary, which in any case is an indispensable authoritative handbook on these matters, is consulted for genera not yet covered by ING. Whenever the data are being compiled directly from the primary sources, the generic name is entered on the data form exactly as it was spelled in the original description of the particular species or other taxon in question. If for some reason this spelling is a variant of the currently accepted orthography of the name, then both spellings are entered into the machine file, the accepted spelling in the "Genus" field and the orthographic variant in the "Genus Synonym" field. In no case is more than one spelling permitted in the "Genus" field for the species and infraspecific taxa of any particular genus of plants.

Species.—Attempt is made to record the specific epithet exactly as it was spelled originally, except where a minor change is required by the provisions of the ICBN governing orthography. (A two-word epithet, for example, is hyphenated to form a single word.) To verify the spelling given on the data form, the editor relies upon the Gray Herbarium Index and/or Index Kewensis insofar as possible, because to check the primary publications in all cases is impractical at this stage. These two indices, which overlap considerably in coverage, frequently provide a check on each other. Unless the taxon in question is by definition outside the limits of one of the two indices, the second index is checked routinely whenever the first does not confirm the spelling given on the data form. With respect to species regarded as being of hybrid origin, the standard practice of placing an "X" followed by a blank space before the epithet is followed.

Infraspecific Taxon.—An infraspecific taxon of any rank recognized by the ICBN can be accommodated in the Type Register by entering the infraspecific epithet and the appropriate rank designator in this field, e.g., VAR GRACILIS or SFM CRASSA. Infraspecific names are entered in the Register in the form of trinomial combinations with the appropriate rank designator, because this form is adequate for nomenclatural purposes; and quadrinomials create problems in the system. The Gray Herbarium Index is used to verify infraspecific epithets as to rank and spelling, but it covers only infraspecific taxa of the New World published during the past 100 years. For this reason, many of the infraspecific names must go unverified at this stage when extensive literature research is impractical. Following is a list of the infraspecific ranks and their standard abbreviations used in the Register:

subspecies	SSP
variety	VAR
subvariety	SVR
form	FOR
subform	SFM
nothomorph	NM.

AUTHOR.—This field carries the full last name and all initials of each author of the binomial or trinomial name under which type specimens are being registered. Whether single or multiple authors, the last name is always placed before the initials. When the use of initials only is certain to lead to confusion, the full first name also is included, e.g., MACOUN, JOHN vs. MACOUN, JAMES M., not MACOUN, J. vs. MACOUN, J. M. The publishing author or the author of the work, if different from the author of the name, is always included in this field and separated from the author of the name by "IN" or "EX" in accordance with the rules and recommendations of the ICBN. No authority exists for author names, but an author authority file has been started for the Type Register on the basis of the Carex Catalog. Further, the FNA Author File is well underway, and it is planned that the two be compatible and that ultimately they be merged. Meanwhile, the standard references are Barnhart's Biographical Notes Upon Botanists (1965) and Staffeu's Taxonomic Literature (1967), but all available biographical references are consulted as necessary. (See also under "Collector[s]." Many specific problems are encountered in dealing with author names, but the details are beyond the scope of this introduction. Examples of specific solutions can be found in the *Carex* Catalog.

TITLE.—The title of the periodical, monograph, or book in which the name of the taxon in question was first validly published is recorded in this field. The title of the article in the periodical or of the chapter in the monograph or book is never included or given in lieu of the title of the periodical or work. In cases where a name was introduced into the literature before it was validly published, reference is made only to the place of valid publication. A name published first without description (nomen nudum), for example, often is later published validly with description. Nomina nuda are not included in the Type Register. All titles are abbreviated consistently. B-P-H is the authority for abbreviating titles of periodicals. For titles of monographs and books, the Type Register project is developing its own authority file, using the principles of abbreviation set forth in B-P-H, and, insofar as possible, taking advantage of the title abbreviation file developed by the ING project. An author's or editor's name is not included in this field unless it actually is part of the title; otherwise, it is included in the previous field as the publishing author or editor.

Level 2—Collection Data

Because there may be multiple type collections (e.g., syntypes) for any taxon, the collection data fields may repeat as a set any number of times. The following set of fields is recorded for each collection, insofar as the data exist and are available.

Collectors(s).—The names of all collectors of the type collection being registered are recorded in this field exactly as author names are formatted in the "Author (s)" field. The name of a collecting expedition may be recorded here when individual collectors cannot be determined. The Type Register project is developing its own authority file for collectors, but meanwhile the following biographical indices, in addition to those already mentioned under the "Author (s)" field, are being used as standard references: "Index Herbariorum, Part II: Collectors" (Lanjouw and Stafleu, 1954, 1957; Chaudhri et al., 1972—completed for letters A to L); "Index to Principal Collections Represented in

the U. S. National Herbarium" (compiled by U. S. National Herbarium staff for internal use, 1965).

COLLECTION NUMBER.—Ordinarily this will be the collector's own number, but when there is no trustworthy means of determining his number, or if he had none, a serial collecting number assigned by an institution or expedition may be recorded instead. The field is regarded pragmatically as the place for a number, any number, that has been associated with the collection and which, when combined with the name (s) entered in the "(Collector (s)" field, normally will form a unique reference to the collection. If a distinction can be made between the number of the collector and the number of his expedition or institution, then the name of the expedition or institution assigning the serial number should be placed in the "Collector (s)" field unless one or more collectors' names already have been entered there; otherwise, this name should be prefixed to the collection number to make clear that the number is not the collector's own. When there is absolute evidence that the collection never has been numbered in any series, then the abbreviation S.N. (sine numero), meaning "without number," should be entered in this field. If on the other hand the number is merely unknown or there is doubt about the existence of a number, then dashes (---) should be entered in the field.

Collection Date(s).—Collection date is recorded just as accurately as it is known, and if necessary two dates or a range of dates are given. All dates, whether single or in ranges, take the form: 28 Sep 1928. On the data form, dashes should be entered to indicate that the collection date is unknown, and the abbreviation S.D. (sine dato) should be used to indicate that the collection is known to be without a collection date. In using the latter designation, the compiler should be absolutely certain that the collection is undatable; otherwise, he should use dashes (---).

GEOGRAPHIC DATA FIELDS.—Four geographic fields are used to pinpoint hierarchically the collecting locality: (1) country; (2) state, province, department, or equivalent; (3) county or equivalent; (4) locality. The specific place is recorded in the fourth or lowest field more or less in the terms of local reference given by the collector himself and should include a town, post office, or other place name that can be found in an atlas. The locality terms in the fourth field are ordered from the largest to

the smallest units, and unimportant words are omitted; latitude and longitude, if given, are placed last in this field; and ecological terms, except where required to clarify the geographic location, are omitted. Because locality data from the specimen and the original description often are merged into a single telegraphic statement, the reference given in this fourth field cannot be assumed to be a direct quotation. Every effort is made, however, to stay close to the words of the original collector and/or author of the description, and substantive additions or interpolations by the compiler or editor are indicated appropriately. It is important to the editor, therefore, that compilers set apart clearly their own comments from the original information. Quotation marks are used only when the context requires that the exact original words be identified, as, for example, when some part of the locality statement is so archaic, confusing, or general as to appear to contradict the rest of the geographic information.

The three, higher level geographic data fields are used to place the locality in its proper geopolitical hierarchy. Whereas the vocabulary used in the "Locality" field is standardized for sorting purposes but not controlled, the vocabulary used in these three fields is controlled as well as standardized for purposes of search and retrieval. Insofar as possible, current official political units are used in all three fields so as to avoid overlapping and inconsistent terminology. As the term "geopolitical" implies, concessions to age-old geographic designations, as in the case of certain islands, are made in a few instances, and "country" is not always an independent political unit in the strictest or most modern sense. Such changes are made only within the structure of the controlled vocabulary, however, as explained below. Island names present a particular problem, because often they have long been used in the biogeographic literature but do not fit into a consistent geopolitical hierarchy (e.g., Borneo, Madagascar). Various stratagems, mostly involving comments in the "Locality" field, have been devised to cope with the problem of identifying well-known biogeographic areas within the file structure of the Type Register. If the name used in any of the three higher level fields is not obviously equivalent to the name used originally by the collector, then his original designation is included parenthetically

with appropriate annotation at the end of the "Locality" field.

All available atlases and gazetteers are used as standard references, the most valuable being The Columbia Lippincott Gazetteer of the World (Seltzer, 1962) and the desk-top Webster's New Geographical Dictionary (1972). The latter, to the extent that it covers the geographic units and problems encountered, has taken on the force virtually of an authority for geographic standardization. The authority adopted for the system of classification and names of the world's countries and equivalent political units is the National Bureau of Standards' Federal Information Processing Standards Publication (FIPS Pub) 10: Countries, Dependencies and Areas of Special Sovereignty (1970). With slight modifications for the purposes of Type Register, this publication is used to control the vocabulary used in the first or "Country" field. Any new name must be fitted into this system before it can be used.

From the data-processing point of view, the purpose of the geographic information is to make search and retrieval possible at least by country and state or province. Thus if the first two fields are left blank or if the names are not carefully controlled and standardized the retrieval aim is clearly thwarted. Collaborators should make every effort to provide data in all four geographic fields, but the most important ones are the first, second, and fourth.

Level 3-Specimen Data

Because there may be multiple type specimens (e.g., isotypes) in any type collection, the specimen data fields may repeat as a set any number of times. Ordinarily, an institution will be represented by a single type specimen under a given collection, but there is no limit to the number of specimens that may be registered per collection as long as each specimen is uniquely identified. In practice, this means that two or more specimens will be cited for the same institution only if they have different herbarium sheet numbers or represent different kinds of types. The data fields in the specimen citation are: Herbarium Abbreviation/Herbarium Sheet Number/Kind of Type/ Data Source Code. The typical specimen citation takes this form: US 1727345 HOLOTYPE CF.

HERBARIUM ABBREVIATION.—The standard international abbreviations established in the fifth edition of "Index Herbariorum, Part I: The Herbaria of the World" (Lanjouw and Stafleu, 1964) are used to designate the herbaria.

Herbarium Sheet Number.-Many herbaria stamp a serial number on every sheet to which an herbarium specimen is attached, and that number is entered into this field. The field may be left blank when the sheet in question lacks a serial number. Because a sheet number represents the single most effective and reliable means of uniquely identifying a specimen, any collaborating herbarium which presently does not number its sheets is strongly urged to number the sheets of type specimens as the data are compiled for the Type Register. From the standpoint of the Register, the serial number is a completely arbitrary datum and need not belong to any general numbering system within the collaborating institution provided that it is part of a unique series. Whenever there is any choice on the matter, a totally numerical series, not a mixed alphabetical/numerical (alphanumeric) should be used, to facilitate proper numerical sorting by machine.

KIND OF TYPE.—This small field represents the purpose of the Type Register and is certain to evoke more discussion and controversy than any other data field in the unit record. For this reason it is vital that every user of the *Carex* Catalog or any other part of the Register understand from the outset the limitations of the data recorded in the "Kind of Type" field.

As emphasized repeatedly, the initial aim of the Type Register project is to record the facts just as they exist in the presently available sources so as to put before the taxonomic user community the greatest amount of information in the shortest possible time, leaving until later stages the objective of methodical, authoritative verification and validation. Once comparative data on type specimens are available group by taxonomic group on a large scale, the specialists themselves, who alone are truly qualified to render authoritative decisions on matters of nomenclature and typification, can help enormously to refine the Type Register data base through feedback arising from actual use of the file. The consequence of this register-now-validatelater approach is seen most often in the imprecise if not incorrect terms by which the different kinds

of types are designated. Because the nomenclatural rules have changed through the years and the well-developed modern terminology is of relatively recent origin, it is natural that types have not been designated according to any consistent standards through the years.

When a type specimen is first registered, its typification is designated by whatever term is indicated in the data source, which usually is a secondary source (card file, specimen file, monograph), unless there is firm evidence to indicate otherwise. Thus any type designation, whether legal or illegal by present nomenclatural rules, may appear in the Type Register.

At the United States National Herbarium, it was customary for many years to designate two basic categories in the segregated collection of type specimens: "type" and "type collection." Usually, "type" has meant what would now be called "holotype," while "type collection" has embraced syntypes, isotypes, and even paratypes according to present terminology. "Types" often prove not to be holotypes, however, and it would be very wrong to draw simple equations between the older and newer terms. The collection of type specimens at the New York Botanical Garden provides another example of the problems with archaic terminology. Here the categories "type" and "cotype" were used for many years, and now "type" often but certainly not always translates to "holotype," while "cotype" may designate any of the kinds of types masquerading under "type collection" at the US.

The authority for designation of kind of type is the ICBN. An auxiliary, highly authoritative standard reference is "An Annotated Glossary of Botanical Nomenclature," by McVaugh et al. (1968). Whenever the original specimens and literature can be examined and the kind of type validated in accordance with the rules, proper terminology is used. By this terminology, the Register is designed to include primarily holotypes, isotypes, syntypes, and isosyntypes. As explained earlier, the present file structure is not designed to handle lectotypes and neotypes (or isolectotypes and isoneotypes), although these are entered sometimes by using the fourth geographic field ("Locality") as a remarks field for the second bibliographic citation. Paratypes are excluded unless other, higher order types cannot be located and there is reason to believe that the paratypes will become important later

for purposes of lectotypification. Fragments of holotypes, isotypes, or syntypes may be included at the discretion of the editor (see under "Scope of Register").

When a holotype has not been designated, as in all the older literature, one usually is faced with a "syntype situation," which often is difficult to resolve precisely on the basis of the ICBN's terminology. A syntype, according to the ICBN (Article 7, Note 3), is "any one of two or more specimens cited by the author when no holotype was designated, or any one of two or more specimens simultaneously designated as types," and an isosyntype is a duplicate of a syntype (see "Guide for the Determination of Types" in the ICBN). "Duplicate" in this context is defined as "part of a single gathering made by a collector at one time." In other words, a "duplicate" is one of two or more specimens constituting a single "collection," as this term ordinarily is used by plant taxonomists and is being used in the context of the Type Register.

The distinction between syntype and isosyntype hinges on such relatively subjective criteria as "specimen citation" and whether or not the original author had the specimens in hand (cf. definitions of McVaugh et al., 1968), which are matters for specialists to determine. The older literature, where the problem of syntypes arises, is well known to be less than precise in the manner of citing specimens. The editorial staff of the Type Register must restrict its interpretations to the letter of the ICBN, and for the most part such fine distinctions as between syntype and isosyntype necessarily are deferred for the proper specialists to make at a later time. To do otherwise would be to assume the specialist's role and responsibility and to introduce false precision at this stage. Accordingly, the term syntype is used for both syntypes and isosyntypes except in the rare cases where the evidence for the isosyntype designation is clear and convincing.

A final point on the use of the term syntype concerns the distinction between single collections and multiple collections. Throughout the older literature there are numerous cases where a single collection has been designated as the type collection, either explicitly or implicitly by virtue of being the only collection cited, even though a holotype has not been set apart. Many specialists would single out a presumptive holotype in these cases on the basis of the specimen (s) which the original author

is presumed to have examined firsthand, but the Type Register editors cannot and should not make authoritative selections in such cases and must regard them all as syntypes. The ICBN does not seem to provide terms for distinguishing this common syntype situation from the other common syntype situations in which two or more type collections are designated simultaneously. Because it is useful to know whether one or more than one type collection is cited, in the Type Register project the term "type collection" has been given a proper meaning for the purpose of distinguishing these two syntype situations. Type collection, in this proper sense, designates a specimen from a single type collection, while "syntype" is reserved for designating a specimen from any one of two or more simultaneously designated type collections.

The catchall term *type material* is used to designate any specimen presumed for some reason to be a type but for which there is no basis at the time of data input to assign a more precise classification.

Many situations arise in the course of compiling and editing data for the Type Register in which it would be useful to have a collective term for designating a collection as a counterpart to the singular term given in the *ICBN* for the specimen. In fact, the terms "holotype collection" and "syntype collection" often are used informally within the project as collective counterparts to the singular terms holotype/isotype and syntype/isosyntype.

DATA SOURCE CODE.—Source of data is indicated according to a classification of source categories, by appending the appropriate code at the end of the specimen citation. It is impossible to document in detail the source of every datum, and any categorization of sources is certain to have many imperfections. The present classification is only a rough first approximation of the kind of documentation needed, but presumably it is a strike in the right direction. It is drawn up largely from the point of view of the central staff and their internal Smithsonian operation, and other categories will have to be added as other institutions join in the effort. Probably codes or numbers will be assigned to individual contributors in the future in the manner of Index Nominum Genericorum, It should be noted that this is more than a classification of sources; up to a point it also is a classification of degree of verification/validation. Obviously, a record based on examination of the original publication and the original specimen is likely to be more reliable than a record based solely on secondary sources. Following is the classification of data source codes:

- OS Original publication and type Specimen examined by person compiling data for Register.
- OP Original Publication examined by person compiling data for Register, but type specimen not seen; supplementary information about the specimen, if any, derived from secondary source (s).
- TS Type Specimen examined by person compiling data for Register, but original publication not seen; citation and other publication data, if any, derived from secondary source (s), including standard indices (Index Kewensis, Gray Herbarium Index), monographs and revisions, annotations on specimen sheet, card files, original descriptions removed from context of publication without exact citation and necessary prefatory matter, and the Type Register catalog itself.
- MG Data derived from most recent MonoGraph of taxonomic group in question without reference to any other source (s) of information.
- SS Data derived entirely from Secondary Sources.
- CF Data transcribed directly from a card in the Card
 File of the type collection of the U. S. National
 Herbarium without verification against the original
 publication or type specimen.
- CO Data from US Card file verified by examination of Original publication.
- CS Data from US Card file verified by examination of type Specimen (s).
- CM Data from US Card file verified or supplemented by consulting latest Monograph of taxonomic group in question.
- UK Source of data UnKnown.

PROCESSING SYSTEM

The first step is to convert the data to machinereadable form, i.e., to "automate" or "capture" the data, so that they can be processed by computer. No data conversion (automation, capture) system is perfect, and none is capable of handling all applications equally well (Shetler, 1972). Several methods and media have been tried thus far in the Type Register project in an effort to find the data conversion system best suited to this data-processing application. In general, the aim is to use the system that will get the data into the computer with the least amount of error and effort. Because the development of data conversion devices and procedures continues to evolve rapidly, a flexible approach has been taken; the data conversion system is kept as independent as possible from the rest of the processing system so that a new conversion system can be adopted at any time with minimal impact on the overall Type Register operation.

The following data conversion systems have been used in the chronological order given:

PAPER TAPE SYSTEM.—Data were mechanically encoded on paper tape with a tape-punching type-writer. The tapes then were read by the computer which converted the holes in the paper tape (i.e., mechanical codes) to electronic codes on magnetic tape and thus transferred the machine-readable data from the medium of capture to the medium of computer processing. This system was used for the duration of the pilot project, and several thousand records, a third of the present file, were captured with it. During the pilot phase, while paper tape was being used, corrections to the machine file were made by means of the standard 80-column punch card.

ON-LINE SYSTEM.—With a typewriter terminal, data were entered via telephone directly on disk storage of a remote time-sharing computer under the on-line control of a sophisticated text-editing program package. This text-editing software permitted the terminal operator to direct the computer in making any of a whole series of deletions, changes, and additions during the input process so that maximum editorial accuracy could be achieved in the machine-readable data base immediately, before it was output onto magnetic tape for subsequent processing by the information retrieval system.

OPTICAL SCANNING SYSTEM.—Data were typed on standard forms with an ordinary 10-pitch IBM Selectric Typewriter equipped with a head having a special optical scanning font. Completed forms were scanned by an optical character reader (OCR) which encoded the data directly on magnetic tape for further computer processing.

Magnetic Tape System.—In the system currently being used, a typewriter encodes data electronically on a magnetic cartridge which is compatible with computer tape. The typewriter unit also serves as a communication terminal to transmit the data captured via telephone directly to the computer, where the data are transferred to disk or tape for further processing. Processing programs can be controlled from this same remote terminal. Of the several data conversion systems used, this one seems to offer the best compromise of advantages and disadvantages in the context of the operation as a whole.

COMPUTER PROCESSING SYSTEM.—During the pilot phase of the Type Register project, this system consisted of a set of specially written COBOL programs, designed to run on the Smithsonian's Honeywell 1250 machine, to create and maintain a machine file, and to account for collaborating institutions to which data-collection cards were sent or from which data were received. It was not designed as an information retrieval system in the strict sense, and in terms of output the system was capable chiefly of producing catalogs, either in book or card form. The pilot system proved with use to be highly specialized with too few capabilities and serious weaknesses in file structure such as inability to handle syntypes. It served the purpose of a pilot system, however, to get a file started and thereby define through experience the problems to be solved in the operational system.

After the pilot phase, the specialized COBOL programs were abandoned, and the processing system was completely redesigned around the commercially available, IBM-supported program package known as the "Generalized Information System" (GIS), which runs on the larger models of IBM's System/360 and System/370. This generalized software performs all the normal functions of creating, maintaining, and querying files and of generating reports. It is an information retrieval system, in the proper sense, with the full capability to search, select, and print answers to specific queries on demand in addition to the capability for producing various types of tabulations, tallies, and catalogs. A COBOL preprocessing program ("preprocessor") and a COBOL concatenating program, by which, respectively, the data are prepared for processing by GIS and the data are joined field by field into publishable paragraph output after processing by GIS, form a part of the total operational system. GIS runs only on IBM equipment and is offered by several computer service bureaus in the Washington, D.C., area with IBM machines. Type Register processing with this system so far has been carried out successfully at several different service bureaus, and the project basically is independent of the computing center.

One of the most important initial tasks in developing the Type Register is to build a file of sufficient size to make reliable studies concerning such matters as record comprehensiveness, record format, field format, need for authority files, and

NUMBER 12 23

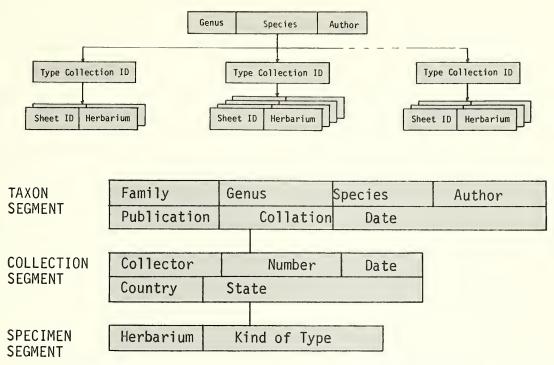


FIGURE 3.—Two oversimplified schematic representations of the three-level record structure in the Botanical Type Specimen Register (from Meadow, 1973a,b).

report types and formats. This requires a flexible information processing system that allows for data to be restructured, reports to be reformatted, tallies to be made, and edits and mass updates to be made without reprogramming. From the output standpoint, it must be possible to select records according to the content of any data field, to relate records to each other on the basis of selected fields, and to sort and format selected fields as desired. GIS affords all these capabilities.

The FNA program is using GIS, and it was for this reason particularly that the decision was made to use GIS in the Type Register project so that these botanical data bases would remain fully compatible. The rationale for using a generalized information processing system and a description of the use of GIS in the FNA program have been set forth in separate papers recently by Harriet R. Meadow (1973a, b), who is responsible for the basic design of the Type Register processing system. The two most important features of GIS, from the point of view of biological data retrieval, are its capability of handling hierarchical data structures and its capability of querying two or more files simultane-

ously for correlated data. With respect to Type Register, for example, the hierarchical feature permits subordination of two or more specimen collections to a single taxon or, in turn, two or more specimens to a single collection within a taxon. The three-level hierarchy of the Type Register is outlined in Figure 3.

The second-generation processing system for the Type Register by no means represents the ultimate system, but it does handle the vast majority of cases very well and solves the most bothersome problems encountered during the pilot phase with the specialized first-generation system. New problems have arisen, however, and with the experience gained by using the present system it will be possible to design a third-generation system in due course that will accommodate all of the special cases that continue to be troublesome, e.g., the case of a lectotype or neotype that requires a second bibliographic citation.

Statistical Summary of Type Register Contents

Following is a statistical summary of the records on the machine file as of 30 September, 1972:

No. Families	135
	950
No. Taxa*10,	525
No. Collections10,	
No. Specimens13,	

*Species, subspecies, varieties, forms, and nothomorphs.

The figures show that the number of collections averages just slightly more than 1/taxon, while the number of specimens averages about 1.3/taxon. The number of specimens will grow rapidly relative to the number of taxa as additional herbaria register their type holdings of taxa already in the file.

This is a tally largely of records input from the type collection of the U.S. National Herbarium (US); i.e., the vast majority of the families and genera are represented only by taxa, collections, and specimens in the US type collection. None of the 135 families is present solely on the basis of types registered from another herbarium, which is to say that at least one taxon in the US collection is registered under every family. The inclusion of a family does not mean, however, that all US types belonging to that family have been recorded. Quite the contrary, the project has only begun, and, as indicated earlier, it now is proceeding alphabetically by genus and is still in the letter "C." This means that for the vast majority of families only genera starting with "A" or "B" are recorded thus far. If a genus is present, however, then all type material in the US collection belonging to that genus is registered. In other words, the file is complete to the genus level with respect to taxa, collections, and specimens in the US type collection.

Before the alphabetical approach was started, registration of US types was essentially completed for several families, and in each case the types of one or more other herbaria also had been recorded. Following is a list of these completed families, showing for each the number of genera, taxa, and specimens registered and the abbreviations of the herbaria for which the file is relatively complete:

Chrysobalanaceae (12 genera, 216 taxa, 1,110 specimens), many herbaria

Dichapetalaceae (7 genera, 43 taxa, 153 specimens), many herbaria

Lamiaceae (84 genera, 1,234 taxa, 1,851 specimens) , LA, MO, NY, US

Scrophulariaceae (85 genera, 943 taxa, 1,075 specimens), US Violaceae (17 genera, 232 taxa, 321 specimens), NY, US

The data for the Chrysobalanaceae and Dichapetalaceae were provided by Ghillean T. Prance of the New York Botanical Garden from his manuscripts of family monographs for the Flora Neotropica series. All type specimens seen by him in the course of his research on these families as of June 1970 are recorded, which means that many herbaria are represented. With respect to these two families, the Type Register is relatively "complete" in the comprehensive, monographic sense in that the file cites the significant types, regardless of where they are on deposit, as they will be cited in the published monograph. (The monographs of these families have since appeared—see Prance 1972a, b.) At the same time the coverage may not be as thorough for any individual herbarium as in the case of the other three families-Lamiaceae, Scrophulariaceae, Violaceae—for which the data were compiled directly from type collections or card files in the herbaria indicated. Within the Scrophulariaceae, contributions to the genus Mimulus have been registered by more than a dozen herbaria (CAN, COLO, DAO, F, GH, JEPS, MICH, NY, OSC, PH, UC, LA, US, WIS) as a result of Hale's experiment (see "Introduction"), and there are miscellaneous other contributions to this family recorded from MO, NY, and a few other herbaria.

Apart from the families listed and the genus *Carex*, for which the catalog is appended, several other groups have been completed in some sense. Nearly half of the US types of Asteraceae (Compositae) had been recorded when the switch from a systematic to an alphabetical approach was made, and the file for this family contained as of 30 September 1972 the following: 255 genera, 2,600 taxa, and 2,650 specimens. Several important genera of the Brassicaceae (Cruciferae) have been completed at least for the US, and the tallies for these genera as of 30 September 1972 were:

Arabis (97 taxa, 106 specimens), US
Draba (119 taxa, 195 specimens), NY, US
Lepidium (29 taxa, 32 specimens), US
Lesquerella (38 taxa, 43 specimens), US
Thlaspi (15 taxa, 59 specimens), F, GH, MO, NY, RM, S, UC, US, WTU

The data for *Thlaspi* were provided by Patricia Kern Holmgren (1971) of the New York Botanical Garden from her revision of the genus, during which she saw types from the above-indicated ten herbaria. She also provided the data from NY for the genus *Draba*.

Finally, John T. Mickel of the New York Botanical Garden provided significant type data on

the genus Anemia subgenus Coptophyllum (Schizaeaceae) and its three segregate genera Aneimiaebotrys, Coptophyllum, and Trochopteris from his monograph of the Anemia (Mickel, 1962), and the statistics are: 4 genera, 35 taxa, 81 specimens.

Use of Type Register

Some of the main uses of the Type Register will be obvious from the discussion in the foregoing sections if not from the concept of the Register itself, and other uses will become apparent through study of the Carex Catalog and its indices. It should be emphasized that a catalog of this type with the same or other types of indices can be produced for any taxonomic group, large or small, presently registered, although the data have not been edited to the same high degree in any other group thus far. The Carex Catalog and each of its indices represent outputs to particular queries. Many other types of queries are possible, and the amount of output depends on the scope of the query and the depth and comprehensiveness of the data base at the time of querying. For example, the request "Print all records of ferns," would yield a relatively small printout at this stage, because only a few fern types are registered, but eventually such a request could yield an overwhelming printout. In querying the file, the user always must exercise discretion in framing his requests, and to do this he must have a reasonable knowledge of the limits of the machine file beforehand or be guided by someone who is familiar with the file. Otherwise he will make meaningless or impractical requests.

By request the file will be queried at cost for anyone. Any kind of query is welcome, and guidance can be provided in framing queries. It is important at this stage to have feedback from potential users in the form of requests for file queries so that all needs are taken into consideration as the Type Register system undergoes further test and refinement, particularly with respect to report formats. Persons wishing to make extensive use of the Register should plan to spend time in Washington, D.C., working with the project staff at the Smithsonian. The costs and other requirements of such an undertaking should be worked out in advance by consultation with the staff.

The Type Register can be queried or sorted by taxonomic name, author, book or journal title, year of publication, collector, collector's number, date of collection, country, state or province, country, herbarium, and kind of type or any combination of these. With a query or sort on any of these fields can be printed other selected fields from the same records, as illustrated by the *Carex* Catalog, which is sorted by taxonomic name, and its five indices, which are sorted in the lead field by author, collector, country, publication date, and herbarium, respectively.

With the cooperation of specialists willing to devote time to editing of groups of interest to themselves, other catalogs can be published. Anyone is invited to propose collaborations in publishing from the Type Register.

A Catalog of the Genus Carex (Cyperaceae)

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Contributing Institutions

The ten American herbaria that have collaborated in the *Carex* project to provide data on their resective collections of types in this genus are listed here in descending order of number of specimens registered. The name of each herbarium is preceded by its standard international abbreviation as established in the fifth edition of "*Index Herbariorum*, Part I, The Herbaria of the World" (Lanjouw and Stafleu 1964).

- NY Herbarium, New York Botanical Garden, Bronx Park, New York
- GH Gray Herbarium, Harvard University, Cambridge, Massachusetts
- US United States National Herbarium, Smithsonian Institution, Washington, D. C.
- CAS Herbarium, California Academy of Sciences, San Francisco, California
- F John G. Searle Herbarium, Field Museum of Natural History, Chicago, Illinois
- MO Herbarium, Missouri Botanical Garden, St. Louis, Missouri
- DS Dudley Herbarium, Stanford University, Stanford, California
- UC Herbarium, University of California, Berkeley, California
- A Herbarium, Arnold Arboretum, Harvard University, Cambridge, Massachusetts
- JEPS Jepson Herbarium, University of California, Berkeley, California

Each institution has contributed to the *Carex* Catalog voluntarily and with little or no outside financial support for work on the Type Register. The FNA program has made use of the Type Register as a pilot project to evaluate various ways of collecting, editing, capturing, and processing hierarchically structured taxon/collection/specimen data. In the course of this work, therefore, small sums of "seed" money were allocated from FNA funds to support data-gathering for the *Carex* project at sev-

eral of the above institutions. The Carex project was undertaken in the first place at the suggestion of the FNA Editorial Committee. The Committee saw in Carex a good model of a large genus with a preponderance of North American species which presents a full gamut of nomenclatural and taxonomic problems to cope with in an information system. (The Carex project, insofar as FNA was concerned, went beyond the Type Register. While the data were being gathered for the Register, other morphological data were also being assembled by FNAunpublished Carex data on Sections Montanae and Ovales collected by A. J. Gilmartin and M. B. Moore—to test the matrix techniques of Morse, 1971, for computer-assisted identification and key construction.) Once the Carex Catalog was established on the basis of several large herbaria, other major herbaria were able to add their data with a surprisingly low investment of man-hours. Field Museum, for example, reported just under 35 man-hours—less than a man-week—to compile its data on Carex types, at a cost of under \$175 for technical labor, but by the time the Museum came into the picture it had the benefit of a basic catalog already including the contributions of A, GH, MO, NY, and US.

Each institution determined its own extent of coverage, and without exception each tried to include all types in the general herbarium which already had been segregated or otherwise identified or which could be identified quickly on the basis of the available computer printout. At the same time, none of the herbaria makes any claim to absolute completeness or thoroughness relative to the number of types in the herbarium, including those still buried in the general collection. A pragmatic philosophy prevailed, with each herbarium doing the best it could under the constraints of its own local

circumstances. It might be assumed in general that the coverage is more complete for the herbaria like NY and US which had separate type collections in the first place and had long-established traditions of segregating type specimens from the main herbarium as they are recognized, than for the herbaria without segregated types, but even this assumption can be questioned. At CAS, a folder-byfolder search of Carex specimens in the herbarium with printout in hand turned up as many unrecognized type specimens as had previously been recognized and segregated into the type collection. A similar search of North American folders at F resulted likewise in doubling the number of recognized types. If one pass through the herbarium can double the number of types, it certainly cannot be concluded that all types have now been found. From a purely curatorial point of view, therefore, the Carex project was very useful in these instances because, as a result, the collection of recognized types was increased by 100 percent.

Clearly it would be unfair to judge the relative size or value of the type collection or even just the Carex type collection of any of these ten herbaria on the basis of the present catalog. Much more extensive development of the Type Register is required before such judgment will be warranted. At the same time, the present ranking is almost predictable. An herbarium that is the major depository for the types of a monographer naturally is expected to have a disproportionate number of types in the group (s) on which the monographer worked. The extensive work of monographer K. K. Mackenzie (1931–35, "Cyperaceae-Cariceae," in North American Flora) clearly might be expected, therefore, to have put NY in the first position, and no one will be surprised to find GH and US close behind. Comparison of the NY and US type collections of Carex provides a good example of the influence of a monographer on a type collection. Together, NY and US have type specimens for over 400 taxa. Of these taxa, half are represented by type specimens only at NY, while about 40 are represented only at US. Thus, NY has five times more "unique" Carex taxa in the Type Register than US. By contrast comparisons in some other groups show NY and US to have about an equal number of "unique" representatives in the Register. CAS is expected to be strong in types of western taxa. In addition, John Thomas has pointed

out (personal correspondence) that CAS has a complete set of H. P. Sartwell's *Carices Americanae Septentrionalis*, Part 1 (nos. 1–70, 1848) and Part 2 (nos. 71–143, 1850), and a "rather good set, but not complete," of S. T. Olney's *Carices Boreali Americanae*, distributed in 1870 and 1871. According to Thomas, many CAS specimens bear the annotations of J. W. Stacey, who was connected with CAS and published on western sedges.

Thomas points out these additional interesting facts about the other herbaria in the San Francisco Bay area. Mackenzie, in the course of doing the treatment of Carex for Abrams' An Illustrated Flora of the Pacific States (Mackenzie, 1923), determined all the Carex specimens at DS from the Pacific States and a number from other regions sometime prior to 1920. The Parish Herbarium, one of the best early collections of southern California plants, is housed at DS. The I. W. Clokey Herbarium, including his sedge types, are at UC, and of course W. L. Jepson's material is at JEPS.

In general, every curator who collaborated in the *Carex* project felt that his effort had beneficial consequences in the herbarium, and there was a nearly unanimous opinion that the results were well worth the effort from the curatorial standpoint alone.

Data-Collection Procedure

The Carex Catalog was initiated with data from the US and MO type collections. For the US, records were converted from the existing card file (see "Source of Data"), while the MO records were captured from data forms filled out at MO in the course of a special search of all the Carex type folders, which are distributed through the herbarium in association with the main collections. The special search was undertaken specifically as part of the Carex project of FNA.

After a common catalog of the US and MO collections was compiled, members of the Type Register staff moved their data-conversion operation to the New York Botanical Garden for two weeks, where, with the assistance of NY personnel, the NY *Carex* data were compiled and input to the system in a matter of days. The data were compiled from the specimens in the separate type col-

lection, which by and large does not include the literature citations, and supplemented with bibliographic data from reference works, primarily Mackenzie's (1931–35) monograph of *Carex*.

It should be pointed out that the type collection at NY was first segregated for security reasons during World War II, and the selection had to be done in haste under less than ideal conditions. Consequently, many nontype but historically important specimens, constituting perhaps as much as 25 percent of the total type collection, deliberately were pulled along with the known or presumptive type specimens in the process of going through the main herbarium. The person who compiled Carex data attempted to sort out the nontype material, and further culling was done during the editorial process. Undoubtedly some nontype material still remains in the present Catalog, although it seems unlikely that the percentage of such specimens is much if any higher for NY at this stage than for any of the other nine herbaria. In any event, it will be a simple matter to delete nontypes from the file as they are discovered and brought to the attention of the Type Register editors in the future.

Once the NY data were merged fully with the US and MO data, a union catalog was delivered to Harvard University for additions from A and GH. At Harvard, data on types of taxa already registered were annotated in the catalog, and data for taxa new to the catalog were compiled on standard forms. In general, Harvard provided only specimen data, and the bibliographic data were looked up and supplied later by the Type Register staff at the Smithsonian before annotations and new records were captured and merged with the US + MO + NY machine file.

When the annotated catalog was returned from Harvard, the A and GH annotations were transcribed to the main working catalog at the Smithsonian, and then the Harvard catalog, as annotated, was sent to the Field Museum of Natural History. Sent with the annotated catalog were photocopies of the data forms for the new taxa added by A and GH. In this way it was possible to give the collaborators at F the benefit of the new data supplied by A and GH immediately, while the capture of these new data was still in progress at the Smithsonian. As a further aid to their work, the collaborators at F were provided with an index by

collector and collector's number to the US + MO + NY catalog.

The collaborators in the San Francisco Bay area were provided with a new catalog incorporating the A and GH data along with the US, MO, and NY data, and this catalog also included an index by collector and collector's number. This catalog was annotated by them with new data from CAS, DS, JEPS, and UC on taxa already registered, and data for taxa new to the file were compiled on standard forms. The annotated catalog and completed forms then were returned to the Smithsonian Institution for input to the system.

At CAS, DS, F, JEPS, and UC the data were compiled in the first instance from the specimens in the herbarium, but in most cases the original publications also were checked when taxa new to the file were involved. Otherwise the bibliographic data were obtained from secondary sources. The original literature was checked for taxon additions without exception at F.

In summary, a round-robin procedure of sorts was used to collect the data. To the extent possible, each new collaborating institution was given the benefit of the latest cumulative catalog incorporating the contributions of previous collaborating herbaria. In this way, maximum advantage could be taken of previous herbarium and library research, and duplication of effort was kept to a minimum. Once the combined data of CAS, DS, IEPS, and UC were returned to the Smithsonian, the data-collection phase was closed out and final editing began.

Editorial Process

All entries were edited in accordance with the principles and procedures set forth in the first part, and the editors take final responsibility for the form and style and all other editorial matters of the present Catalog. To integrate new contributions into the accumulating data base, differences between supposedly identical records from different institutions constantly had to be reconciled by turning to standard references and the original literature. Whenever possible, record content was verified by checking the original publication. In the end, nearly every original description cited in the Catalog was seen at least once by the editors and in many cases several times. In many cases, furthermore, the designation of kind of type was validated

according to the ICBN; however, because much of the checking of original literature was done by a technical editor, untrained in the application of the type method and terminology, many of the records were verified without being validated, to use the distinction defined in an earlier section (p. 00). According to this distinction, the development of the Carex file of the Type Register can be said to have attained the Stage 2 "verification" level overall, with some records still at the Stage 1 "registration" level and with a substantial number of others having been "validated" more or less according to Stage 3 standards. Of course the careful scrutiny of specialists, with appropriate feedback from them, is needed over a period of years before the present Carex file can be said to have truly attained Stage 3 development.

While the bibliographic data could be double-checked or supplied (if not provided in the first place) by examining the original publication, the specimen data could be verified in this way only to the extent that the publications gave corroborating details. Ultimately, therefore, each contributing institution is responsible for the reliability of its own specimen data. In the case of NY, however, the editors, who assisted in the data collection itself, share responsibility for the reliability of the specimen data. In any event, citations always were checked against *Index Kewensis* and/or the *Gray Herbarium Index* if the original publications could not be examined.

Editing of this type of open-ended file, in which considerable subjective judgment is required, is a never-ending process, and a reasonable degree of thoroughness is achieved only after many editorial "passes" through the file. The editing proceeded in a series of phases and cycles in which all records were examined a field at a time, by means of inverted listings or indices, for consistency and accuracy, and updated printouts were obtained for another editorial round. Thus, for example, title citations were standardized in one editorial phase, while names of authors were standardized in another phase. The editorial corrections for all fields then were merged into a common working hardcopy of the file before the process of updating the machine file was begun. After one cycle of such editing was finished and the file was thought to be "clean," a new catalog and set of indices were printed out. Then a whole new cycle of editing was begun. This iterative process continued until the editing began to yield diminishing returns and it became necessary to bring the never-ending process to a reasonable stopping point, which the present Catalog is believed to represent. In such a dynamic system, editorial perfection is relative at best, and at this stage the editors certainly make no claim to perfection in any sense of the word, although every effort has been made to be thorough and consistent.

Milestone Events

Computerized data banks are a new development in biology, and there is still much to be learned about the mechanics of creating and maintaining them. The process is all too easily underestimated, especially with respect to manpower requirements, and overly optimistic timetables are the rule. An enormous effort on the part of many individuals went into the creation of the Carex Catalog over a period of more than two years. During this time the tedious editorial work seemed to go on endlessly, while technical problems with the systems development and processing also came in a steady stream. The following chronology of milestones in the more than two-year process has a two-fold purpose—first, to provide a practical example of the laborious steps involved in creating a data bank, and, second, to caution against overenthusiasm and oversimplification on the part of others contemplating similar efforts. It must be stressed

contemplating similar efforts. It must be stressed,	
however,	that all during the two and one-half
years other taxonomic groups were being input to	
the Type Register along with Carex, and it never	
was possible to work exclusively on Carex.	
1970	
January	Decision made to begin work on genus as part
<i>y</i> ,	of FNA <i>Carex</i> project. Editing of data in US card file begun.
February	Collection of data begun at MO and first records returned to US for input.
	Photocopies of all <i>Carex</i> records in US card file sent to MO.
March	New data-capture procedure organized using on- line, text-editing system.
April	All US and MO records input, totaling just over 200 taxa and about 250 specimens.
May	First printout of US + MO records produced and edited, and machine file updated.
	Second printout produced, and copy sent to NY.

Second printout of US + MO records edited, and June machine file updated. Members of Type Register staff worked at NY for last two weeks during which time all NY Carex records (200+ taxa, 300 specimens), along with records of other groups, were input to the system on-line via telephone to computer in Washington, D.C. First printout of new taxa added to file by NY produced. July Report on NY work prepared. August Printout of NY additions edited, and machine file updated. First printout of US + MO + NY records produced. September US + MO + NY printout edited, and machine file updated. Second printout of joint records produced, totaling 415 taxa and 544 specimens. Decision made to publish a Carex catalog as the sample installment of Type Register. November Preliminary report formats defined for catalog December Use of on-line system discontinued, and paper tape system reorganized and used again. 1971 January-Intensive editing and updating of preliminary Carex Catalog (US + MO + NY) continued. May OCR data-capture system inaugurated, and paper tape system phased out. Sample catalog of 100 Carex records with 4 crossindices produced and distributed to a limited cross-section of taxonomists. June Preliminary catalog of Carex displayed at botanical meetings in Edmonton, Alberta, and copies of sample of 100 records handed out. Decision made to hold off publication of Catalog at least until GH could be included. July Final printout of US + MO + NY catalog generated for GH. August Copy of latest catalog delivered in person to Harvard University for use in compiling data from A and GH; specimen data compiled and returned to US. Copy delivered also to NY for final prepublication check; check made and printout returned. Copy sent to MO for final prepublication check. Copy displayed at annual meeting of American Institute of Biological Sciences, Ft. Collins, Colorado. Contributions solicited by letter from F, San Francisco Bay area herbaria. September F indicated willingness to contribute Carex records. October Arrangements made for F to contribute records. and necessary materials supplied, including index by collector to preliminary catalog. Data collection begun at F. Editing of A and GH data begun.

SMITHSONIAN CONTRIBUTIONS TO BOTANY Report on progress to meeting of FNA Program Council in Miami, Florida. November Arrangements made for CAS, DS, JEPS, and UC to contribute, and necessary materials supplied. Copy of collector index sent to MO. Critique of sample catalog of 100 Carex received from F. J. Hermann. Editing of A and GH data completed, and records input to system. December Data collection at F completed. New cumulative catalog incorporating A, GH, MO, NY, and US produced, with 537 taxa, 542 collections, and 776 specimens. Four indices in preliminary format generated. COBOL paragraphing (concatenating) program designed, written, and debugged; GIS/COBOL interface programmed and tested. 1972 January All data returned from F to US for input. All data returned by CAS, DS, JEPS, and UC. Limited input with magnetic cartridge system Computer program for listing and tallying taxa in Type Register tested. Data collection phase essentially brought to Sample catalog produced using COBOL concatenation program. Annotations from catalog used by F and from February catalog used by CAS, DS, JEPS, and UC transferred to working copy. Editing and final data capture continued apace. COBOL concatenating program, including GIS interface, tested satisfactorily. March-New cumulative catalog printed, including 600 taxa, 607 collections, and 854 specimens. April Nine indices printed for final field-by-field edit-Writing of introductory sections of this paper New catalog printed, including 609 taxa, 615 May collections, and 1,050 specimens. New set of nine indices also produced. Editing and updating of file continued. Final prepublication edition of Catalog printed, along with indices, which included 606 taxa, 612 collections, and 1,059 specimens. tests with COBOL program.

Final format of Catalog established after various Several types of computer paper tested. Camera-ready copy of present Catalog and indices produced for Smithsonian Institution Press, including same data base as final catalog

June

Manuscript and camera-ready copy of Catalog August and indices sent to press.

The decision to use Carex for the trial publication was made in September 1970, exactly two years before the manuscript finally went to press. What is obvious from this chronology is that for every additional collaborating institution the preparation of a final catalog is delayed at least a few months. Under the best of circumstances, turnaround time between cycles of data-collecting, editing, and processing quickly add up to days, weeks, and months. Clearly, the task of creating a data base of this type is limitless ultimately, and definite bounds must be established if the dynamic process is ever to stand still long enough to yield meaningful products. Desirable as it would have been, therefore, to include many more herbaria in this Catalog, the line had to be drawn finally. If the Catalog had been closed off after the MO, NY, and US contributions, as originally planned, it would have gone to press a year earlier, in mid-1971. The addition of seven more herbaria, including several key ones, surely justifies the year's delay, but it is doubtful that further delays could be justified at this time for any other herbaria. We believe that it is vitally important now to get the concept of the Type Register across to the botanical community through the medium of the Carex Catalog without further delay.

Use of Carex Catalog

The Carex Catalog consists of the "Catalog of Specimens" and cross-indices to the "Catalog of Specimens" by five different fields (descriptors): (1) "Author Index," (2) "Publication-Date Index," (3) "Collector Index," (4) "Geographic Index," and (5) "Herbarium Index." (Hereafter the term "Catalog" is used for the "Catalog of Specimens" proper.) The Catalog is arranged alphabetically by taxon and includes the full unit-record for each taxon, as it is stored in the computer, except for the family and genus names, the data source codes, and several file-control dates and numbers. The family name and genus name, Cyperaceae and Carex, respectively, have been omitted because they are the same for all taxa and, printed at the top of each entry, would constitute unnecesary words that would tend only to hide the key words for alphabetization, the epithets. The Catalog is alphabetized, therefore, by the specific and infraspecific epithets.

The indices, in addition to providing access to the Catalog by other criteria than the taxonomic name, represent data files in their own right which may serve a user's purpose without his ever taking recourse to the main Catalog. They are independent data files because they all include the name of the taxon and one or more other fields that place the key indexing field in the context of related data. The data source code has not been included record by record because it is usually OS; furthermore, the classification of sources has been in use for only a short time and was not used throughout the development of the *Carex* Catalog (see "Data Source Code").

The Catalog provides citations of original authors and publications, data on type collections, and a list of type specimens known to exist in the ten herbaria surveyed—all subordinated to the taxonomic name. No taxa are included that are not represented by at least one specimen in at least one of the ten herbaria. The organization of the data in the paragraphed unit-entry is as follows:

SPECIFIC EPITHET/RANK/INFRASPECIFIC EPITHET/ AUTHOR OF NAME, CITATION OF ORIGINAL PUB-LICATION. DATE OF PUBLICATION.

COUNTRY: STATE OR PROVINCE: COUNTY: LOCAL-ITY (COMMENT IF ANY) (COLLECTOR, COLLEC-TOR'S NUMBER. DATE OF COLLECTION)

HERBARIUM ABBREVIATION/SHEET NUMBER/ KIND OF TYPE

HERBARIUM ABBREVIATION [etc., for additional specimen]

COUNTRY [etc., for additional collection] HERBARIUM ABBREVIATION [etc.]

The five indices are all cross-referenced to the Catalog by means of the specific epithet instead of a page or record number because the unit records in the Catalog are alphabetical by epithet, allowing for fast look-up. Space did not permit printing infraspecific epithets in four of the indices; therefore, the specific epithet is prefixed by an asterisk (*) if the record being cross-referenced is not the species itself but one of its infraspecific taxa. This device should permit the user to get to the desired entry almost as quickly as if the infraspecific epithet had been printed, as in the "Herbarium Index." Content and format are more or less self-evident in each of the indices. It should be emphasized that these are only five of an almost infinite number of possible indices. Furthermore, they all were generated directly from the exact same data base from which

the Catalog itself was produced and have identical data wherever content overlaps.

The purpose of the "Author Index" is to point to all taxa in the Catalog described by a particular author or combination of authors, and, therefore, the Index is alphabetized primarily by author and secondarily by specific epithet. Combinations of authors are alphabetized as combinations, not as individual authors, owing to present system limitations. A person interested in a particular taxon described by a particular author or author combination can learn quickly from the Index whether there is an entry in the Catalog for this taxon and then go to it. Persons wishing to study an author's descriptions chronologically, by year of publication, would want to have this Index resequenced with the date rather than the epithet being the secondary sort-key.

The primary sort-key of the "Publication-Date Index" is the year of publication, from the oldest to the youngest, the actual range being from 1803 to 1971. Within each year the secondary sort-key is the specific epithet, which references an entry in the Catalog. This Index should be useful to those who are interested in nomenclatural priority in the genus or in tracing the historical development of knowledge about *Carex*. By itself, the Index, which includes the name of the author or author combination, is a chronological summary of the botanists who have described species in the genus as registered in the Catalog.

The "Collector Index" is in effect a list by collector of collections cited in the Catalog and provides a convenient means of checking any herbarium for type material of taxa recorded thus far in the Carex file of the Type Register. Under the name of each collector or combination of collectors are listed the numbers and dates of all collections in the Catalog, cross-referenced by the specific epithets. The name is the primary sort-key, and the specific epithet is the secondary sort-key. A variation of this Index would include a list of all herbaria in which the collector's type specimens are deposited. In other words, the kind of guide to the location of types that A. S. Hitchcock and his colleagues were trying to compile directly in the 1930s (see "Introduction") can be produced as a by-product of the Type Register data base. Some interesting observations can be made by comparing the "Collector Index" with the "Author Index." It becomes clear at once, for example, that while some authors collected almost as many new taxa as they described, others described many more than they collected. Further examination indicates that this difference may reflect the difference between a floristic taxonomist like M. L. Fernald, who tended to describe his own species, and a monographic worker like K. K. Mackenzie, who described taxa from among specimens of many collectors amassed for a study of the genus.

The "Geographic Index" provides access to the collections of the Catalog primarily by country of origin and secondarily by state, province, or equivalent. The specific epithet, which is the cross-reference to the Catalog, is the tertiary sort-key. The value of this Index will be obvious at once to floristic workers who wish to know which taxa in their region are typified by specimens collected within the region, e.g., within the State of California.

The "Herbarium Index," alphabetized in the first instance by institution, lists alphabetically by specific and infraspecific epithets under each of the ten institutions the taxa in the Catalog for which they hold type specimens. The herbarium sheet number, if there is one, and the kind of type are listed also. The sheet number is the tertiary sort-key. Many of the type designations have not been validated, and the problems of validating kind of type have been discussed at length earlier in this paper (pp. 8 and 19–21). For this reason many of the type specimens registered still carry the original designation of the herbarium submitting the data.

The following informal or archaic terms, which appear in the Catalog and in the "Herbarium Index" but which are not sanctioned by the *ICBN*, require brief definition of their meaning or apparent meaning in the Catalog. It should be pointed out, however, that the presence of a correct term (e.g., holotype, isotype) is no guarantee that it has been used correctly. A large number of the designations have been validated, and where the terminology seems to be used consistently within a collection, e.g., where one holotype and one or more isotypes are indicated, it can be assumed that the designations were validated.

cotype Presumptive syntype or isosyntype, but may be isotype or paratype, if a type at all.

type Presumptive holotype, but may be isotype, syntype, isosyntype, or paratype, if a type at

all.

type collection Term used in a proper sense for a specimen of a single collection cited by original author without designating a holotype—in this sense, a syntype or isosyntype according to *ICBN* (see pp. 19–21); otherwise term flags a presumptive syntype, isosyntype, paratype, or

even isotype, if a type at all.

type fragment Presumably fragment of the holotype, but may be fragment of isotype, syntype, isosyntype, paratype, or other kind of type, if of

type at all.

type material Presumptive type specimen of some kind—catchall term.

The Catalog and Indices were printed by computer directly from the data base, and not a single change has been made. What is presented here is exactly what was stored on the machine file as of 16 June 1972, with the exception of punctuation between fields which may have been added in the process of concatenation. Because the system provided only for printing in upper case letters, possibilities for variation of typography were limited. **Boldfacing** by overprinting the same words two or more times was used for the specific and infraspecific epithets, and in the process it was necessary also to boldface rank designators connecting epithets. Thus the taxon names stand out from the rest of the text and facilitate searching the Catalog. Insofar as practical, the standard conventions of punctuation in nomenclatural literature were used.

Errata

Several errors were detected in the Catalog after the camera-ready copy had been produced. By record number in the Catalog, these are: No. 2. ABLATA BAILEY, L. H. The citation following the author's name is to the place where the neotype is designated, because the original publication did not designate a type specimen, and the citation of Bailey's original publication is cited as a parenthetic remark at the end of the geographic locality. To be consistent with the rest of the Catalog, however, where the citation after the author is always the citation of the original publication, the editors should have reversed the two citations in this record. As a result of this editorial error, Bailey in the "Author Index" and "Publication-Date Index" appears to have described *C. ablata* in 1935, when Mackenzie designated the neotype, rather than in 1888. This error does point up the problem of dealing with neotypes, however, and a certain logic can be advanced for either way of handling the two citations.

No. 99. CHIHUAHUAENSIS. Spell CHIHUAHUENSIS, omitting second "A."

No. 418. PIRCHINCHENSIS. Spell PICHINCHENSIS, omitting "R."

No. 424. PLUVICA. Spell PLUVIA, omitting "C."

No. 446. **PURPUREOVAGINATA.** Spell **PURPUREOVAGINATA**, inserting hyphen.

No. 448. **PYCNOTHYSOS.** Spell **PYCNOTHYRSOS,** inserting "R."

No. 544. **TENERA VAR. RICHII FERNALD, M. L. At** the end of the geographic locality, MIDDLESEX FALLS should read MIDDLESEX FELLS.

No. 549. **TERRAE-NOVAE** FERNALD, M. L. The hyphen should be removed from the collector's name GIL-BERT-JR., F.A. The practice of joining Jr. to the end of the collector's or author's last name by a hyphen in this manner was required by the specifications of the pilot processing system, but this requirement no longer obtains.

Note: Changes in spelling of specific epithets also apply wherever these epithets have appeared in the indices.

Statistical Summary of Catalog

606 taxa (species, subspecies—SSP, varieties—VAR, forms—FOR, nothomorphs—NM.)

612 collections

1,059 specimens (sheets)

CATALOG OF SPECIMENS

-A-

1. ABDITA BICKNELL, E.P., BULL. TORREY BOT. CLUB 35:492. 1908.

USA: NEW YORK: LONG ISLAND, RICHMOND HILL (BICKNELL, E.P., ---.

11 MAY 1904)

NY TYPE

2. ABLATA BAILEY, L.H., N. AMER. FL. 18:314. 1935. CANADA: BRITISH COLUMBIA: VANCOUVER ISLAND, MOUNT MARK; ALT. 250C FT.; (ORIG. PUB.: BOT. GAZ. 13:82. 1888.) (MACOUN, JOHN, 13401. 26 JUL 1887)

> GH ISONEOTYPE NY ISONEOTYPE

3. ABORIGINUM JONES, M.E., BULL. MONTANA STATE UNIV., BIOL. SER. 15:69.

USA: IDAHO: ADAMS CO.: INDIAN VALLEY; ALT. 2300 FT.

(JONES, M.E., --- 12 JUL 1899)

CAS 242617 ISOTYPE DS 149709 ISOTYPE NY ISOTYPE

4. ABRAMSII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:482. 1909.
USA: CALIFORNIA: SAN BERNARDINO CO.: SAN BERNARDINO MOUNTAINS,
BEAR VALLEY (ABRAMS.L., 2816. 31 JUL 1902)

DS 55317 ISOTYPE F 186491 ISOTYPE NY HOLOTYPE

5. ABRUPTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:618. 1916. USA: CALIFORNIA: BUTTE CO.: STIRLING CITY; ALT. 3000 FT.

(HELLER, A.A., 10820, 07 JUN 1913)

DS 64125 ISOTYPE NY HOLOTYPE

6. ABSCONDITA VAR. ROSTELLATA FERNALD, M.L., RHODORA 44:386. 1942.
USA: VIRGINIA: ISLE OF WIGHT CO.: LEE'S MILL (FERNALD, M.L. AND LONG, B., 12012. 08 JUN 1940)

GH I SOTYPE

MO TYPE COLLECTION
NY TYPE COLLECTION
US 2003161 TYPE COLLECTION

7. X ABSCONDITIFORMIS FERNALD, M.L., RHODORA 44:387. 1942.

USA: VIRGINIA: SUSSEX CO.: NOTTOWAY RIVER, HUSKE (FERNALD, M.L.

AND LONG, B., 12969. 13 JUN 1941)

GH HOLOTYPE
GH ISOTYPE
MO 1306480 ISOTYPE

NY I SOTYPE US 2003299 I SOTYPE

8. ACCEDENS HOLM, H.T., AMER. J. SCI. SER.4, 16:457. 1903.
USA: OREGON: MULTNOMAH CO.: SAUVIE ISLAND (COLUMBIA RIVER AT MOUTH OF WILLAMETTE RIVER) (HOWELL, T.J., ---. -- MAY 1880)
GH SYNTYPE
MO SYNTYPE

9. ACROPHILA BLAKE, S.T., J. ARNOLD ARBOR. 28:114. 1947.
INDONESIA: WEST NEW GUINEA: LAKE HABBEMA; (COUNTRY AS "DUTCH NEW GUINEA") (BRASS, L.J., 9515. -- AUG 1938)

A ISOTYPE

10. ACUTA VAR. PALLIDA BOOTT, F., ILL. GENUS CAREX 4:166, PL.554. 1867.
USA: OREGON: "FORT COLVILLE TO ROCKY MOUNTAINS, WEST KOOTENAY"
(LYALL, DAVID, ---. -- 1861)
GH TYPE COLLECTION

11. ACUTINA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:52. 1889.

USA: OREGON: DESCHUTES RIVER (HOWELL, T.J., 935. 09 MAY 1885)

F 206585 TYPE MATERIAL

GH ISOTYPE

NY TYPE COLLECTION

US 25164 TYPE COLLECTION

US 817087 TYPE COLLECTION

- 12. ACUTINELLA MACKENZIE, K. K., N. AMER. FL. 18:407. 1935.

 USA: OREGON: -- (HENDERSON, L. F., 13. -- -- 1883)

 US 27286 HOLOTYPE
- 13. ADUSTA VAR. GLOMERATA OLNEY,S.T. EX BAILEY,L.H., BOT. GAZ. 9:139.
 1884.
 CANADA: NEW BRUNSWICK: KENT CO.: SALMON RIVER (FOWLER,J., ---.
 1872)
 GH SYNTYPE
- 14. AENEA FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:480. 1902.

 USA: NEW HAMPSHIRE: GRAFTON CO.: FRANCONIA, FOREST HILLS HOUSE

 (FAXON, E. AND FAXON, C.E., ---. 23 JUN 1888)

 GH SYNTYPE
- 15. AEQUA CLARKE, C.B., BULL. MISC. INFORM. ADD.SER.8:86. 1908.

 USA: CALIFORNIA: SAN MATEO CO.: SAN MATEO, CRYSTAL SPRINGS LAKE
 (BAKER, C.F., 811. 10 MAY 1902)

 GH TYPE COLLECTION

 NY TYPE COLLECTION
- 16. AESTIVALIFORMIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 37:238.
 1910.
 USA: NEW JERSEY: PASSAIC CO.: GREENWOOD LAKE (MACKENZIE, K.K.,
 2676. 23 JUN 1907)
 GH ISOTYPE

MO TYPE MATERIAL

17. AESTIVALIS CURTIS, M.A. EX GRAY, A., AMER. J. SCI. ARTS SER.1, 42:28.
1841.

USA: NORTH CAROLINA: -- (CURTIS, M.A., --- JUL 1841)

MO TYPE MATERIAL NY TYPE MATERIAL

18. AGGLOMERATA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 33:442. 1906. USA: MISSOURI: JACKSON CO.: COURTNEY (BUSH, B.F., 1718.

25 MAY 1902)

MO TYPE COLLECTION US 440179 TYPE COLLECTION

19. AGGREGATA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 37:246. 1910. USA: MISSOURI: JACKSON CO.: COURTNEY (BUSH, B.F., 1718. 25 MAY 1902)

NY TYPE

20. AGROSTOIDES MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:607. 1907. USA: NEW MEXICO: SOCORRO CO.: LUNA; ALT. 6500 FT. (WOOTON, E.O., ---. 28 JUL 1900)

US 617798 TYPE US 694342 TYPE

- 22. ALATA VAR. FERRUGINEA FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:477, PL.2. 1902.
 USA: OHIO: -- (SULLIVANT, W.S., ---.)
 GH HOLOTYPE
- 24. ALBO-NIGRA MACKENZIE, K.K. IN RYDBERG, P.A., FL. ROCKY MOUNT.
 137, 1060. 1917.
 USA: WYOMING: PARK CO.: NEEDLE MOUNTAIN (CARY, M., 613.
 11 JUL 1910)
 US 858947 TYPE COLLECTION
- 25. ALMA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:50. 1889.

 USA: CALIFORNIA: -- (PARRY, C.C. AND LEMMON, J.G., 396.

 -- --- 1876)

 CAS 497554 ISOTYPE

 NY ISOTYPE
- 26. ALOPECOIDEA TUCKERMAN, E., ENUM. CARIC. 18. 1843.

```
USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., ---. ---)
      F
              32699 ISOTYPE
      F
              32700 ISOTYPE
      F
              56916
                      ISOTYPE
      F
             349624
                    ISOTYPE
      F
             373673 ISOTYPE
      F
             373679
                     ISOTYPE
                      ISOTYPE
      GH
      NY
                      ISOTYPE
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27. ALOPECDIDEA VAR. SPARSI-SPICATA DEWEY, C., AMER. J. SCI. ARTS SER. 2, 8:350. 1849.

USA: MICHIGAN: MACOMB CO.: WASHINGTON (COOLEY, D., 74. ---)
CAS 553879 ISOTYPE

GH ISOTYPE NY ISOTYPE

- 28. AMPHIBOLA STEUDEL, E.G., SYN. PL. GLUM. 2:234. 1855.

 USA: LOUISIANA: ORLEANS PARISH: NEW ORLEANS (DRUMMOND, T., 437.

 ---)

 NY

 TYPE COLLECTION
- 29. AMPHIBOLA VAR. TURGIDA FERNALD, M.L., RHODORA 44:311. 1942.
 USA: NEW YORK: TOMPKINS CO.: ITHACA (WIEGAND, K.M. AND
 THOMAS, C.C., 1915. 15 JUN 1914)
 GH HOLOTYPE
- 30. AMPLISQUAMA HERMANN, F.J., RHODORA 57:158. 1955.
 USA: GEORGIA: GILMER CO.: CHATSWORTH (PYRON, J.H. AND
 MCVAUGH, R., 2951. 15 MAY 1938)
 US 2231424 TYPE
- 31. ANGUSTIOR MACKENZIE, K.K. IN RYDBERG, P.A., FL. ROCKY MOUNT.

 124, 1060. 1917.

 USA: DISTRICT OF COLUMBIA: -- (STEELE, E.S., ---. -- 1896)

 NY TYPE COLLECTION
- 32. ANGUSTIOR VAR. GRACILENTA CLAUSEN, R.T. AND WAHL, H.A., RHODORA 41:30. 1939.

 USA: PENNSYLVANIA: CENTRE CO.: INGLEBY (CLAUSEN, R.T. AND WAHL, H.A., 2532. 06 JUN 1937)

 GH TYPE
- 33. ANTHOXANTHERA PRESL,K.B., REL. HAENK. 3:203. 1828.

 USA: ALASKA: NUTKA SOUND ("SINUS NUTKA") (HAENKE,T., ---. ---)

 US 865058 TYPE
- 34. APERTA BOOTT, F. IN HOOKER, W.J., FL. BOR. AMER. 2:218.
 1839 ("1840").
 USA: WASHINGTON: COLUMBIA RIVER (SCOULER, J., ---. ---)
 GH SYNTYPE
- 35. APERTA VAR. UMBROSA KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG.

26:254. 1929.
USA: WASHINGTON: KLICKITAT CO.: BINGEN (SUKSDORF, W.N., 12347.

CAS 242962 ISOTYPE

36. APERTA VAR. VIRIDANS KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG. 26:254. 1929.

USA: WASHINGTON: KLICKITAT CO.: BINGEN (SUKSDORF, W.N., 12348. 15 SEP-23 OCT 1927)

CAS 242961 SYNTYPE

USA: WASHINGTON: KLICKITAT CO.: BINGEN (SUKSDORF, W.N., 12359. 23 OCT 1927)

CAS 242960 SYNTYPE

37. APODA CLOKEY,I.W., AMER. J. SCI. SER.5, 3:88, PL.2. 1922.
USA: IDAHO: CUSTER CO.: MACKAY (NELSON,A. AND MACBRIDE,J.F.,
1533. 01 AUG 1911)

NY ISOTYPE UC 905439 HOLOTYPE

- 38. APODOSTACHYA OHWI, J., JAP. J. BOT. 7:188. 1934.

 TAIWAN: --: MOUNT NANKO-TAISAN (OHWI, J., 4182. -- JUL 1933)

 F 1464064 TYPE MATERIAL
- 39. AQUATILIS WAHLENBERG, G., KONGL. VETENSK. ACAD. NYA HANDL. 24:165.
 1803.
 USA: NEW YORK: SENECA CO.: JUNIUS (SARTWELL, H.P., 56. ---)

USA: NEW YORK: SENECA CO.: JUNIUS (SARTWELL, H.P., 56. ---)
NY TYPE COLLECTION

40. AQUATILIS VAR. SUBSTRICTA KUKENTHAL, G. IN ENGLER, H.G.A., PFLANZENR. 4, FAM. 20:309. 1909.

USA: NEW YORK: SENECA CO.: JUNIUS (SARTWELL, H.P., 56. ---)

CAS 554019 ISOTYPE GH ISOTYPE

MO TYPE COLLECTION

41. ARAPAHOENSIS CLOKEY, I.W., RHODORA 21:83. 1919.

USA: COLORADO: BOULDER CO.: MOUNT ARAPAHOE; ALT. 11700 FT. (CLOKEY, I.W., 3227. 29 JUL 1918)

CAS 102030 ISOTYPE
DS 109019 ISOTYPE
GH ISOTYPE
NY ISOTYPE
UC 905436 HOLOTYPE

42. ARCTAEFORMIS MACKENZIE, K.K., N. AMER. FL. 18:97. 1931.
CANADA: BRITISH COLUMBIA: ELGIN (HENRY, J.K., 9152.
C4 JUN 1915)
NY TYPE

43. ARCTICA DEWEY, C., AMER. J. SCI. ARTS SER. 1, 27:239. 1835.

CANADA: SASKATCHEWAN: CARLTON HOUSE (52 51 N., 106 13 W.)

(RICHARDSON, J., ---. ---)

NY

TYPE COLLECTION

44. ARGYRANTHA TUCKERMAN, E. EX DEWEY, C., AMER. J. SCI. ARTS SER. 2, 29:346. 1860.

USA: MASSACHUSETTS: HAMPSHIRE CO.: AMHERST (TUCKERMAN, E., ---.

---)

GH HOLOTYPE
GH ISOTYPE

45. ARISTATA VAR. LONGO-LANCEOLATA DEWEY, C., AMER. J. SCI. ARTS

SER.2, 18:102. 1854.

USA: NEBRASKA: BAD LANDS ("MAUVAIS TERRES") (HAYDEN, F.V., ---.

-- --- 1853)

GH

46. ARSENII KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 8:326. 1910. MEXICO: MICHOACAN: MORELIA (ARSENE,G.(FRERE), 3054.

HOLOTYPE

16 JUL 1909)

GH I SOTYPE NY I SOTYPE

US 1030011 TYPE COLLECTION

47. ARTITECTA VAR. SUBTILIROSTRIS HERMANN, F.J., RHODORA 40:79. 1938. USA: INDIANA: VERMILLION CO.: CLINTON (DEAM, C.C., 54764.

05 MAY 1934)

GH

HOLOTYPE

48. ASSINIBOINENSIS BOOTT, W., BOT. GAZ. 9:91. 1884.

CANADA: MANITOBA: ASSINIBOINE RAPIDS (MACOUN, JOHN, 52.

14 JUN 1879)

GH

SYNTYPE

49. ATHABASCENSIS HERMANN, F.J., LEAFL. W. BOT. 8:111. 1957.

CANADA: ALBERTA: JASPER NATIONAL PARK, ATHABASCA RIVER,

ATHABASCA FALLS (HERMANN, F.J., 13498. 28 AUG 1956)

US 2265958 HOLOTYPE

50. ATHROSTACHYA OLNEY, S.T. IN GRAY, A., PROC. AMER. ACAD. ARTS 7:393.
1868.

USA: CALIFORNIA: MARIPOSA CO.: YOSEMITE NATIONAL PARK, YOSEMITE VALLEY (BOLANDER, H.N., 6213. 17 JUN 1863)

NY

SYNTYPE

US 319165 SYNTYPE

USA: CALIFORNIA: MARIPOSA CO.: YOSEMITE NATIONAL PARK, YOSEMITE VALLEY (BREWER, W.H., 1650. 17 JUN 1863)

MO

SYNTYPE

NY

SYNTYPE

51. ATRACTODES HERMANN, F.J., J. WASH. ACAD. SCI. 40:283. 1950. MEXICO: CHIAPAS: COMITAN (SHARP, A.J., 45450. 29 APR 1945)

NY

ISOTYPE

US 2133192 TYPE

52. ATROFUSCA VAR. DECOLORATA PORSILD, A.E., SARGENTIA 4:20. 1943. CANADA: NORTHWEST TERRITORIES: MACKENZIE DISTRICT: GREAT BEAR LAKE, CAPE MCDONNELL (PORSILD, A.E. AND PORSILD, R.T., 5120. 02 AUG 1928) US 2096188 ISOTYPE

ATROSQUAMA MACKENZIE, K.K., PROC. BIOL. SOC. WASH. 25:51. 1912. 53. CANADA: ALBERTA: SMOKY RIVER (HOLLISTER.N., 14. 05 AUG 1911) NY ISOTYPE US 622651 HOLOTYPE

AUREA VAR. ANDROGYNA OLNEY, S.T. IN WATSON, S., 54. BOT. U.S. GEOL. EXPLOR. 40TH PAR. 371. 1871. USA: PENNSYLVANIA: ERIE CO.: ERIE, PRESQUE ISLE (PENINSULA) (GARBER, A.P., ---. 09 JUN 1869) NY ISOTYPE

55. AUROLENSIS STEUDEL, E.G., SYN. PL. GLUM. 2:223. 1855. USA: LOUISIANA: ORLEANS PARISH: NEW ORLEANS (DRUMMOND.T., 431. -- --- 1832) NY TYPE COLLECTION

56. AUSTRO-CAROLINIANA BAILEY, L. H., BULL. TORREY BOT. CLUB 20:428. 1893. USA: SOUTH CAROLINA: PICKENS CO.: TABLE MOUNTAIN (BUCKLEY, S.B., MO 1834152 HOLOTYPE

57. AUSTROMONTANA PARISH, S.B., BULL. S. CALIF. ACAD. SCI. 4:108, PL.15. 1905. USA: CALIFORNIA: SAN BERNARDINO CO.: MILL CREEK FALLS; ALT.

6000 FT. (PARISH, S.B., 2485. 03 JUL 1892) DS 489410 HOLOTYPE

58. AUTUMNALIS MACKENZIE, K.K., N. AMER. FL. 18:66. 1931. MEXICO: MEXICO: FLOR DE MARIA (PRINGLE, C.G., 4275. 03 OCT 1892) F 264169 ISOTYPE

MO **I SOTYPE** US 817295 HOLOTYPE

59. AZTECICA MACKENZIE, K.K., N. AMER. FL. 18:229. 1935. MEXICO: OAXACA: SIERRA DE SAN FELIPE; ALT. 2300 M. (PRINGLE, C.G., 4839. 19 AUG 1894) GH TYPE COLLECTION

MO TYPE COLLECTION

60. AZUAYAE STEYERMARK, J.A., PHYTOLOGIA 9:337. 1964. ECUADOR: AZUAY: TOREADOR (STEYERMARK, J.A., 53105. 15 JUN 1943) F 1266184 TYPE MATERIAL NY **I SOTYPE** US 1933437 ISOTYPE

- 61. BACKANA DEWEY, C., AMER. J. SCI. ARTS SER.1, 29:250. 1836.

 CANADA: SASKATCHEWAN: CARLTON HOUSE (52 51°N., 106 13°W.)

 (RICHARDSON, J., 417. ---)

 GH

 TYPE COLLECTION
- 62. BACKII BOOTT, F. IN HOOKER, W.J., FL. BOR. AMER. 2:210.
 1839 ("1840").
 CANADA: SASKATCHEWAN: CARLTON HOUSE (52 51°N., 106 13°W.)
 (RICHARDSON, J., ---. ---)
 GH SYNTYPE
 NY SYNTYPE
- 63. BALTZELLII CHAPMAN, A.W. EX DEWEY, C., AMER. J. SCI. ARTS SER. 2, 3:335. 1847.

 USA: FLORIDA: BEAR CREEK (CHAPMAN, A.W., ---. ---)

 NY

 COTYPE
- 64. BAMBUSETORUM MERRILL, E.D., PHILIPP. J. SCI. 13:132. 1918.

 CHINA: KWANGTUNG: LOH-FAU-SHAN (MOUNTAIN) (MERRILL, E.D., 10985.

 12 AUG 1917)

 US 2333748 ISOTYPE
- 65. BANKSII BOOTT,F., TRANS. LINN. SOC. LONDON 20:119. 1846.

 ARGENTINA: TIERRA DEL FUEGO (TERRITORY): TIERRA DEL FUEGO

 (BANKS,J. AND SOLANDER,D.C., --- 1769)

 MO 1611724 SYNTYPE

 US 1232938 SYNTYPE
- 67. BARRATTII SCHWEINITZ, L.D. AND TORREY, J.,
 ANN. LYCEUM NAT. HIST. NEW YORK 1:361. 1824.
 USA: NEW JERSEY: CAPE MAY CO.: CAPE MAY (COLLINS, Z., ---.)
 NY
 TYPE COLLECTION
- 68. BARTLETTII O'NEILL, H.T., PUBL. CARNEGIE INST. WASH. 522:255. 1940.
 BRITISH HONDURAS: CAYO: MOUNT PINE RIDGE (BARTLETT, H.H.,
 11718A. 24 FEB 1931)
 F 999642 TYPE MATERIAL
 GH ISOTYPE
 NY TYPE
- 69. BAYARDI FERNALD, M.L., RHODORA 44:71. 1942.

- USA: VIRGINIA: SOUTHAMPTON CO.: DREWRYVILLE (FERNALD, M.L.; LONG, B. AND SMART, R.F., 5677. 22 JUN 1936) GH HOLOTYPE
- 70. BILTMOREANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 37:234. 1910.
 USA: NORTH CAROLINA: SATULA MOUNTAIN (---, 268B. 25 MAY 1897)
 GH ISOTYPE
 NY TYPE
- 71. BIPARTITA VAR. AUSTROMONTANA HERMANN, F.J., LEAFL. W. BOT. 10:16.
 1963.
 USA: COLORADO: BOULDER CO.: NEDERLAND, NOWIT RIDGE; ALT. 11500
 FT. (HERMANN, F.J., 17059. 15 AUG 1961)
 CAS 430881 ISOTYPE
- 72. BONANZENSIS BRITTON, N.L., BULL. NEW YORK BOT. GARD. 2:160. 1901.

 CANADA: YUKON TERRITORY: BONANZA RIVER (WILLIAMS, R.S., ---.

 18 JUN 1899)

 NY TYPE
- BONPLANDII VAR. MINOR BOOTT, F. IN GRAY, A., 73. PROC. ACAD. NAT. SCI. PHILADELPHIA 1863:77. 1863. USA: COLORADO: ROCKY MOUNTAINS; LAT. 39-41 N. (HALL, E. AND -- --- 1862) HARBOUR, J.P., 591. 314869 F ISOTYPE F 456934 **I SOTYPE** GH HOLOTYPE MO **ISOTYPE**
- 74. BRACHYPODA HOLM, H.T., AMER. J. SCI. SER.4, 20:302. 1905.

 USA: OREGON: KLAMATH CO.: CRATER LAKE NATIONAL PARK, CATHEDRAL SPRING (COVILLE, F.V., 1455. 11 SEP 1902)

 US 415269 TYPE COLLECTION
- 75. BRAINERDII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 40:534. 1913.
 USA: CALIFORNIA: EL DORADO CO.: SIERRA NEVADA RANGE, SLIPPERY
 FORD (BRAINERD, E., 121. 19 JUL 1897)
 US 964504 TYPE COLLECTION
- 76. BREVICAULIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 40:547. 1913.
 USA: OREGON: LINCOLN CO.: YAQUINA BAY (HOWELL, T.J., 2994.

 -- MAY 1886)
 NY TYPE COLLECTION
- 77. BREVIS BLAKE, S.T., J. ARNOLD ARBOR. 28:111. 1947.

 PAPUA AND NEW GUINEA: PAPUA (TERRITORY): OWEN STANLEY RANGE,

 MOUNT ALBERT EDWARD; (COUNTRY AS "BRITISH NEW GUINEA")

 (BRASS, L.J., 4418. -- MAY-JUL 1933)

 A ISOTYPE
- 78. BREVISQUAMA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:152. 1907. USA: WYOMING: SWEETWATER CO.: RED DESERT, ORENDO BUTTE (NELSON, A., 7124. 11 JUN 1900)

NY HOLOTYPE

80. BRONGNIARTII VAR. DENSA BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:137.
1886 ("1887").
USA: CALIFORNIA: MARK WEST CREEK (BIGELOW, J.M., ---.

-- --- 1853-1854)

NY SYNTYPE

- 81. BRUNNEA VAR. SUBTEIOGYNA KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG.
 8:8. 1910.
 PHILIPPINES: BENGUET: LUZON (ISLAND), MOUNT PULOG
 (MERRILL,E.D., 6505. -- MAY 1909)
 US 711129 TYPE
- 82. BUCKLEYI DEWEY, C., AMER. J. SCI. ARTS SER.1, 48:143. 1845.

 USA: NORTH CAROLINA: MITCHELL CO.: ROAN MOUNTAIN (BUCKLEY, S.B.,

 ---. ---)

 NY

 TYPE COLLECTION
- 83. BULBOSTYLIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:617. 1915.
 USA: TEXAS: TARRANT CO.: FORT WORTH (RUTH, A., 360.
 12 APR 1913)
 MO 710112 TYPE COLLECTION

MO 710112 TYPE COLLECTION 587668 TYPE COLLECTION

- 84. BURCHELLIANA BOECKELER, J.O., LINNAEA 41:234. 1877.

 SOUTH AFRICA: --: -- (BURCHELL, W.J., 1911. ---)

 GH ISOTYPE
- 85. BUSHII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 37:241. 1910. USA: ARKANSAS: HEMPSTEAD CO.: FULTON (BUSH, B.F., 2514. 30 APR 1905)

 NY TYPE COLLECTION

-C-

- 86. CAESARIENSIS MACKENZIE,K.K., N. AMER. FL. 18:440. 1935.

 USA: NEW JERSEY: CAMDEN CO.: LAUREL SPRINGS (LONG,B., F23212.

 15 JUN 1920)

 GH ISOTYPE

 NY TYPE
- 87. CALIFORNICA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:9. 1889.
 USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER, H.N.,
 4741. 01 MAY 1866)
 CAS 383776 TYPE COLLECTION

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DS 49734 TYPE COLLECTION
MO TYPE COLLECTION
NY TYPE COLLECTION
US 29741 TYPE COLLECTION
US 319268 TYPE COLLECTION
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- 88. CAMPLYOCARPA HOLM, H.T., AMER. J. SCI. SER.4, 20:304. 1905.

 USA: OREGON: KLAMATH CO.: CRATER LAKE NATIONAL PARK, CATHEDRAL

 SPRING (COVILLE, F.V., 1457. 11 SEP 1902)

 US 690937 TYPE COLLECTION
- 89. CAMPYLOCARPA SSP. AFFINIS MAGUIRE, B. AND HOLMGREN, A.H.,
 LEAFL. W. BOT. 4:262. 1946.
 USA: UTAH: JUAB CO.: DEEP CREEK RANGE, INDIAN FARM CREEK
 (MAGUIRE, B. AND HOLMGREN, A.H., 21947. 16 JUL 1943)
 CAS 334353 ISOTYPE
 NY HOLOTYPE
 US 1885701 ISOTYPE
- 90. CANESCENS VAR. DISJUNCTA FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:488, PL.5. 1902.

 CANADA: NEW BRUNSWICK: VICTORIA CO.: SERPENTINE RIVER (HAY, G.u., 84. 24 JUL 1900)

 GH PARATYPE
- 91. CANESCENS VAR. DUBIA BAILEY, L.H., BOT. GAZ. 9:119. 1884.

 USA: UTAH: BEAR RIVER CANYON; ALT. 10000 FT. (WATSON, S., 1231A.

 -- AUG 1869)

 NY ISOTYPE
- 92. CANESCENS VAR. SPHAEROSTACHYA TUCKERMAN, E., ENUM. CARIC. 19. 1843. USA: --: NEW ENGLAND (---, --- 1843) GH ISOTYPE

TYPE COLLECTION

NY

NY

- 93. CAREYANA TORREY, J. EX DEWEY, C., AMER. J. SCI. ARTS SER.1, 30:60.
 1836.
 USA: NEW YORK: CAYUGA CO.: AUBURN (CAREY, J., ---. -- MAY 1832)
 NY HOLOTYPE
- 94. CAROLINIANA BUCKLEY, S.B., AMER. J. SCI. ARTS SER.1, 45:173. 1843.

 USA: SOUTH CAROLINA: PICKENS CO.: TABLE MOUNTAIN (BUCKLEY, S.B.,

 ---- ---)

 GH

 TYPE COLLECTION

TYPE COLLECTION

- 95. CEPHALOPHORA VAR. MAXIMA DEWEY,C., AMER. J. SCI. ARTS SER.1, 43:92.
 1842.
 USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL,H.P., ---.)
 TYPE
- 96. CHALCIOLEPIS HOLM, H.T., AMER. J. SCI. SER. 4, 16:21,28. 1903. USA: COLORADO: MINERAL CO.: PAGOS A PEAK (BAKER, C.F., 226.

45

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-- AUG 1899)
GH SYNTYPE
MO SYNTYPE
NY SYNTYPE
US 368814 SYNTYPE
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97. CHAPMANI SARTWELL, H.P. EX DEWEY, C., AMER. J. SCI. ARTS

SER.2, 19:254. 1855.

USA: FLORIDA: -- (CHAPMAN, A.W., 113. ---)

CAS 553918 ISOTYPE US 28433 ISOTYPE

98. CHIAPENSIS HERMANN, F. J., BRITTONIA 19:68. 1967.

MEXICO: CHIAPAS: CHAMULA (BREEDLOVE, D.E., 6714. 30 JUL 1964)

F 1620435 ISOTYPE
NY ISOTYPE
US 2460272 HOLOTYPE

99. CHIHUAHUAENSIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 35:265.

MEXICO: CHIHUAHUA: PUERTA DE ST. DIEGO; ALT. 6500 FT. (HARTMAN, C.V., 620. 12 APR 1891)

F 49642 ISOTYPE
NY HOLOTYPE
US 306281 ISOTYPE

100. CHIKUNGANA BAILEY, L.H., GENTES HERB. 1:13. 1920.

CHINA: HUPEH AND HONAN: CHIKUNGSHAN (BAILEY, L. H., ---.

13 JUN 1917) NY

TYPE

101. CILIARIS FERNALD, M.L., PROC. AMER. ACAD. ARTS 43:61. 1907. MEXICO: HIDALGO: LENA STATION (PRINGLE, C.G., 10039.

26 AUG 1905)

CAS 232050 ISOTYPE CAS 445943 **ISOTYPE** F 202021 **I SOTYPE** GH HOLOTYPE MO **ISOTYPE** NY ISOTYPE US 462090 ISOTYPE

102. CINNAMOMEA OLNEY, S.T. IN GRAY, A., PROC. AMER. ACAD. ARTS 7:396.
1868.

USA: CALIFORNIA: HUMBOLDT CO.: RED MOUNTAIN (BOLANDER, H.N., 6477. -- -- 1866)

CAS 553874 TYPE FRAGMENT
TYPE COLLECTION
US 28457 TYPE COLLECTION
US 319228 TYPE COLLECTION

103. CIRCINNATA MEYER, C.A.,

MEM. ACAD. IMP. SCI. ST.-PETERSBOURG DIVERS SAVANS 1:209, PL.6.

1831.
USA: ALASKA: ALEUTIAN ISLANDS, UNALASKA (ISLAND)
(CHAMISSO, L.A., ---. ---)
GH ISOTYPE

- 104. CLADOSTACHYA VAR. MAXIMA KUKENTHAL,G. IN ENGLER,H.G.A., PFLANZENR.
 4, FAM.20:268. 1909.
 BOLIVIA: --: -- (BANG,M., 2210. ---)
 US 350077 TYPE COLLECTION
- 105. CLIVICOLA FERNALD, M.L. AND WEATHERBY, C.A., RHODORA 33:233. 1931.

 CANADA: QUEBEC: GASPE CO.: MOUNT SAINT PIERRE (FERNALD, M.L.;

 WEATHERBY, C.A. AND STEBBINS, G.L., 2411. 05 JUL 1931)

 GH HOLOTYPE

 US 1839933 ISOTYPE
- 106. COLLECTA DEWEY, C., AMER. J. SCI. ARTS SER.1, 11:314. 1826.

 USA: MASSACHUSETTS: HAMPSHIRE CO.: WORTHINGTON (DEWEY, C., ---.

 GH HOLOTYPE
- 107. COLUMBIANA DEWEY,C., AMER. J. SCI. ARTS SER.1, 30:62. 1836.
 USA: --: COLUMBIA RIVER (SCOULER,J., ---.)
 NY HOLOTYPE
- 108. COMANS VAR. STRICTA CHEESEMAN, T.F.,

 TRANS. & PROC. NEW ZEALAND INST. 24:415. 1892.

 NEW ZEALAND: CANTERBURY (DISTRICT): SOUTH ISLAND, LAKE TEKAPO;

 ALT. 2500 FT. (CHEESEMAN, T.F., ---. -- JAN 1883)

 US 2038822 TYPE COLLECTION
- 110. CONCINNOIDES MACKENZIE, K.K., BULL. TORREY BOT. CLUB 33:440. 1906.
 USA: MONTANA: FLATHEAD CO.: COLUMBIA FALLS (WILLIAMS, R.S., ---.
 07 JUN 1893)
 NY TYPE
- 111. CONFERTIFLORA BOOTT, F. IN GRAY, A., MEM. AMER. ACAD. ARTS
 N.S., 6:418. 1859.

 JAPAN: HOKKAIDO (PREFECTURE): HAKODATE (WRIGHT, C., ---.
 -- JUN 1855)
 US 27235 TYPE MATERIAL
- 112. CONJUNCTA BOOTT, F., ILL. GENUS CAREX 3:122, PL.392. 1862.
 USA: OHIO: FRANKLIN CO.: COLUMBUS (SULLIVANT, W.S., ---.)
 CAS 383550 SYNTYPE
 GH SYNTYPE
- 113. CONSPECTA MACKENZIE, K.K., N. AMER. FL. 18:294. 1935.

MEXICO: PUEBLA: PUEBLA (ARSENE, G. (FRERE), 1359. 01 AUG 1907)
US 1032323 HOLOTYPE

114. CONSTANCEANA STACEY, J. W., LEAFL. W. BOT. 2:123. 1938.
USA: WASHINGTON: YAKIMA CO.: MOUNT ADAMS ("PADDO"), WODEN
VALLEY (SUKSDORF, W.N., 6864. 16 AUG 1909)

CAS 242987 HOLOTYPE DS 269649 ISOTYPE NY ISOTYPE

- 115. CONVOLUTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:428. 1916.
 USA: NEW JERSEY: MORRIS CO.: BUDD'S LAKE (MACKENZIE, K.K., 2088.
 10 JUN 1906)
 NY TYPE
- 116. COOLEYI DEWEY, C. IN WOOD, A., AMER. J. SCI. ARTS SER.1, 48:144.
 1845.
 USA: MICHIGAN: MACOMB CO.: WASHINGTON (COOLEY, D., ---.)
 GH HOLOTYPE
- 118. CRANDALLII GANDOGER, M., BULL. SOC. BOT. FRANCE 66:295. 1920. USA: COLORADO: SUMMIT CO.: GRAYS PEAK (JONES, M.E., 834. 28 AUG 1878)

 NY TYPE COLLECTION
- 119. CRAWFORDII FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:469, PL.1.
 1902.
 USA: NEW HAMPSHIRE: COOS CO.: MOUNT WASHINGTON, BETWEEN
 MARSHFIELD AND CRAWFORDS (FAXON, E. AND FAXON, C.E., ---.
 06 JUL 1878)
 GH SYNTYPE
- 120. CRAWFORDII VAR. VIGENS FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:470, PL.1. 1902.

 CANADA: QUEBEC: GASPE CO.: EAST GASPE (MACOUN, JOHN, 6. 01 AUG 1882)

 GH SYNTYPE
- 121. CREBRIFLORA WIEGAND, K.M., RHODORA 24:197. 1922.

 USA: FLORIDA: GADSDEN CO.: APPALACHICOLA RIVER, CHATTAHOOCHEE
 (CURTISS, A.H., 3267. -- SEP 1882)

 F 26304 TYPE MATERIAL
 GH TYPE
 NY TYPE
- 122. CRINITA VAR. BREVICRINIS FERNALD, M.L., RHODORA 48:54. 1946. USA: VIRGINIA: DINWIDDIE CO.: ROWANTA (FERNALD, M.L. AND

LONG, B., 8143. 08 JUN 1938)
GH HOLOTYPE
US 278555 ISOTYPE

- 123. CRINITA VAR. MINOR BOOTT, F., ILL. GENUS CAREX 1:18. 1858.

 USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., 78. ---)

 CAS 553883 TYPE COLLECTION
- 124. CRINITA VAR. SIMULANS FERNALD, M.L., PROC. PORTLAND SOC. NAT. HIST. 2:135. 1897.
 USA: MAINE: PISCATAQUIS CO.: GREENVILLE (FERNALD, M.L., 264.

O4 JUL 1894)
GH SYNTYPE

US 278555 SYNTYPE

125. CRISTATA SCHWEINITZ, L.D., ANN. LYCEUM NAT. HIST. NEW YORK 1:66.

USA: NEW JERSEY: -- (---, ---. ---)
GH ISOTYPE

GH ISOTYPE

127. CRUS-CORVI VAR. VIRGINIANA FERNALD, M.L., RHODORA 39:393, PL.476. 1937.

USA: VIRGINIA: SOUTHAMPTON CO.: DREWRYVILLE (FERNALD, M.L.; LONG, B. AND SMART, R.F., 5677. 22-23 JUN 1936)

GH HOLOTYPE

MO 1108572 ISOTYPE

NY ISOTYPE US 1682487 ISOTYPE

- 128. CRYPTOLEPIS MACKENZIE, K.K., TORREYA 14:157. 1914.
 USA: NEW JERSEY: SUSSEX CO.: WHITE POND (MACKENZIE, K.K., 4645.
 26 JUN 1910)
 NY TYPE
- 129. CUBENSIS KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 23:220. 1926.

 CUBA: ORIENTE: PICO TURGUINO (EKMAN,E.L., 14506. 21 JUL 1922)

 NY ISOTYPE

 US 1302602 TYPE COLLECTION
- 130. CUBENSIS VAR. FLACCIDA KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 23:221. 1926.

 HAITI: --: -- (EKMAN,E.L., ---. 08 AUG 1925)

 NY TYPE COLLECTION
- 131. CUCHUMATANENSIS STANDLEY, P.C. AND STEYERMARK, J.A., CEIBA 4:62.
 1953.
 GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, TUNIMA;

ALT. 3400-3500 M. (STEYERMARK, J.A., 48347. 07 JUL 1942) F 1128952 HOLOTYPE

- 132. CULMENICOLA STEYERMARK, J.A., FIELDIANA, BOT. 28:65, FIG.7. 1951.

 VENEZUELA: SUCRE: CFRRO TURUMIQUIRE, EASTERN PEAK; ALT. 2500 M.

 (STEYERMARK, J.A., 62605. 06 MAY 1945)

 F 1266170 HOLOTYPE
- 133. CUMULATA FOR. SOLUTA FERNALD, M.L., RHODORA 44:285. 1942.

 CANADA: NOVA SCOTIA: QUEENS CO.: BROAD RIVER (FERNALD, M.L. AND BISSELL, C.H., 20311. 16 AUG 1920)

 GH HOLOTYPE
- 134. CUNEATA OHWI, J., MEM. COLL. SCI. KYOTO IMP. UNIV., SER.B, BIOL. 6:256. 1931.

 JAPAN: AOMORI (PREFECTURE): HONSHU (ISLAND), AOMORI (KINASHI, N., ---. -- JUL 1909)

 F 1406416 TYPE MATERIAL
- 135. CURATORIUM STACEY, J.W., LEAFL. W. BOT. 2:13. 1937.

 USA: ARIZONA: COCONINO CO.: GRAND CANYON NATIONAL PARK, KAIBAB

 TRAIL TO ROARING SPRINGS (EASTWOOD, A. AND HOWELL, J.T., 1101.

 23 JUN 1933)

 CAS 204973 SYNTYPE

SYNTYPE

136. CUSICKII MACKENZIE,K.K. IN PIPER,C.V. AND BEATTIE,R.K.,
FL. NW. COAST 72. 1915.
USA: OREGON: BAKER CO.: HEAD OF BURNT RIVER (CUSICK,W.C., 1331.
-- JUL 1886)
NY SYNTYPE

-D-

137. DANAENSIS STACEY, J.W., LEAFL. W. BOT. 2:166. 1939.
USA: CALIFORNIA: TUOLUMNE CO.: MOUNT DANA (HOWELL, J.T., 14546.
11 AUG 1938)

CAS 259874 ISOTYPE
CAS 259875 HOLOTYPE
GH ISOTYPE
US 1765700 ISOTYPE

204974

CAS

138. DAVYI MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:606. 1916.
USA: CALIFORNIA: PLACER CO.: TRUCKEE RIVER (BURT-DAVY, J., 3266.
25-30 JUN 1897)

GH ISOTYPE
JEPS 2511 ISOTYPE
NY ISOTYPE
UC 50814 HOLOTYPE

139. X DEAMII HERMANN, F. J., RHODORA 40:81. 1938.

USA: INDIANA: PIKE CO.: OTWELL (HERMANN, F.J., 6147. 05 JUL 1934)

F 751055 ISOTYPE

141. DEBILIS VAR. INTERCURSA FERNALD, M.L., RHODORA 44:307, PL.713. 1942.

USA: VIRGINIA: GREENSVILLE CO.: ORION (FERNALD, M.L. AND LONG, B., 12016. 13 JUN 1940)

GH HOLOTYPE US 2003164 ISOTYPE

142. DEBILIS VAR. PUBERA GRAY, A., MAN. BOT. ED. 5, 593. 1867.
USA: PENNSYLVANIA: CENTRE CO.: BEAR MEADOWS (PORTER, T.C., ---.)

GH HOLOTYPE

143. DEVIA CHEESEMAN, T.F., TRANS. & PROC. NEW ZEALAND INST. 15:301. 1883.

NEW ZEALAND: NELSON (DISTRICT): SOUTH ISLAND, NELSON (CHEESEMAN, T.F., 83. -- JAN 1882)

GH ISOTYPE

- 144. DEWEYANA VAR. COLLECTANEA FERNALD, M.L., RHODORA 15:93. 1913.

 CANADA: QUEBEC: BONAVENTURE CO.: CASCAPEDIA RIVER, GRAND

 CASCAPEDIA (WILLIAMS, E.F.; COLLINS, J.F. AND FERNALD, M.L.,

 ---. 12-15 JUL 1905)

 GH HOLOTYPE
- 145. DEWEYANA VAR. SPARSIFLORA OLNEY, S.T. EX BAILEY, L.H., BOT. GAZ. 13:87. 1888.

USA: OREGON: MARION CO.: SALEM (HALL, E., 580. -- -- 1871)

F 455703 TYPE COLLECTION
F 1429766 TYPE COLLECTION
GH TYPE COLLECTION
NY TYPE COLLECTION

146. DIGITALIS VAR. ASYMMETRICA FERNALD, M.L., RHODORA 43:544. 1941. USA: VIRGINIA: SOUTHAMPTON CO.: APPLEWHITE CHURCH

(FERNALD, M.L. AND LONG, B., 11791. 08 MAY 1940)

CAS 336835 ISOTYPE GH HOLOTYPE MO 1306423 ISOTYPE US 2003133 ISOTYPE

147. DIGITALIS VAR. GLAUCA CHAPMAN, A.W., FL. S. U.S. ED.1, 541. 1860.

USA: FLORIDA: MIDDLE FLORIDA (CHAPMAN, A.W., ---. -- 1842)

NY TYPE COLLECTION

US 969118 TYPE COLLECTION

148. DIGITALIS VAR. MACROPODA FERNALD, M.L., RHODORA 40:400, PL.511. 1938.

USA: VIRGINIA: GREENSVILLE CO.: -- (FERNALD, M.L. AND LONG, B., 7767. 08 APR 1938)

GH HOLOTYPE

MO 1129747 ISOTYPE

NY ISOTYPE

US 1761151 ISOTYPE

149. DIVERSISTYLIS ROACH, A.W., MADRONO 11:277. 1952.

USA: OREGON: LINN CO.: CLEAR LAKE JUNCTION (ROACH, A.W., 202. 10 JUN 1949)

CAS 372834 ISOTYPE

- 150. DONNELL-SMITHII BAILEY, L.H., MEM. TORREY BOT. CLUB 1:56. 1889.

 GUATEMALA: ALTA VERAPAZ: PANSAMALA; ALT. 3800 FT. (SMITH, J.D.

 AND TURCKHEIM, H., 659. -- JUN 1885)

 US 817314 TYPE COLLECTION
- 151. DOUGLASII VAR. DENSISPICATA DEWEY, C., AMER. J. SCI. ARTS SER. 2, 32:41. 1861.

 USA: NEBRASKA: -- (HAYDEN, F.V., 580. ---)

 GH

 TYPE MATERIAL
- USA: CALIFORNIA: MONTEREY CO.: TASSAJARA HOT SPRINGS

 (ELMER, A.D.E., 3132. -- JUN 1901)

 DS 145619 HOLOTYPE

 DS 629609 ISOTYPE

 MO ISOTYPE

 NY ISOTYPE
- 153. X DUMANII LEPAGE, E., NATURALISTE CANAD. 83:143, FIG.4. 1956.

 CANADA: QUEBEC: VIEUX-COMPTOIR (LEPAGE, E., 32078. 30 JUL 1954)

 GH ISOTYPE

 US 2176489 ISOTYPE
- 154. DURANDII BOECKELER, J.O., ALLG. BOT. Z. SYST. 2:189. 1896.

 COSTA RICA: --: CERRO DE BUENA VISTA (PITTIER, H. AND TONDUZ, A.,
 3376. 19 JAN 1891)

 CAS 351155 ISOTYPE
 US 579795 TYPE MATERIAL
- 155. DURIFOLIA BAILEY, L.H., BULL. TORREY BOT. CLUB 20:428. 1893.

 CANADA: SASKATCHEWAN: CARLTON HOUSE (52 51'N., 106 13'W.)

 (RICHARDSON, J., ---. ---)

 NY SYNTYPE
- 156. DUTILLYI O'NEILL, H.T. AND DUMAN, M., RHODORA 43:413, PL.669. 1941.
 CANADA: MANITOBA: CHURCHILL RIVER, CHURCHILL (DUMAN, M., 1506.
 08 AUG 1938)
 GH ISOTYPE

157. EASTWOODIANA STACEY, J.W., LEAFL. W. BOT. 2:121. 1938.
USA: OREGON: GRANT CO.: DIXIE MOUNTAIN (HENDERSON, L.F., 5583.
25 JUL 1925)

CAS 130386 HOLOTYPE DS 144009 ISOTYPE GH ISOTYPE

- 158. EBENEA RYDBERG, P.A., BULL. TORREY BOT. CLUB 28:266. 1901.

 USA: COLORADO: EL PASO CO.: PIKES PEAK (CLEMENTS, F., ---.

 1900)

 NY

 TYPE
- 159. ECHINATA VAR. ORMANTHA FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:483, PL.4. 1902.

 USA: CALIFORNIA: EL DORADO CO.: SIERRA NEVADA RANGE, STRAWBERRY CREEK (BRAINERD, E., 160. 18 JUL 1897)

 GH HOLOTYPE
- 160. EGGERTII BAILEY, L.H., BOT. GAZ. 21:6. 1896.
 USA: MISSOURI: BUTLER CO.: -- (EGGERT, H., ---. 08 AUG 1893)
 NY TYPE COLLECTION
- 161. EGGLESTONII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:614. 1915.
 USA: COLORADO: GUNNISON CO.: MOUNT CARBON, KEBLER PASS
 (EGGLESTON, W. W., 6181. 22 AUG 191C)
 NY ISOTYPE
 US 857864 TYPE
- 162. EGGLESTONII VAR. FESTIVELLIFORMIS HERMANN, F.J., BRITTONIA 12:78.
 1960.
 MEXICO: NUEVO LEON: GALEANA (SCHNEIDER, R.A., 954. 25 JUL 1938)
 US 2466328 HOLOTYPE
- 163. EGREGIA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:414. 1915.
 USA: WASHINGTON: KLICKITAT CO.: FALCON VALLEY (SUKSDORF, W.N.,
 5181. 15 JUL 1905)
 DS 284598 ISOTYPE

DS 284598 ISOTYPE
NY TYPE

- 164. EKMANII KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 23:221. 1926.

 HAITI: OUEST: PETIONVILLE (EKMAN,E.L., H1453. 12 AUG 1924)

 GH ISOTYPE

 NY TYPE MATERIAL

 US 1411790 COTYPE
- 165. EKMANII VAR. HOTTENSIS KUKENTHAL,G. AND EKMAN,E.L., ARK. BOT. 22A(17):9. 1929. HAITI:.--: MORNE CALUMETTE; ALT. 1200-1300 M. (EKMAN,E.L.,

H10662. 14 SEP 1928)

GH ISOTYPE

US 1414090 TYPE COLLECTION

166. ELBERTANA KELSO, L., BIOL. LEAFL. 31:3. 1945.

USA: COLORADO: LAKE CO.: MOUNT ELBERT (KELSO, L., 4967.

C1 AUG 1945)

GH TYPE MATERIAL

167. ELEOCHARIS BAILEY, L.H., MEM. TORREY BOT. CLUB 1:6. 1889.

CANADA: SASKATCHEWAN: SASKATCHEWAN PLAINS (MACOUN, JOHN, 1665.

12 AUG 1872)

GH I SOTYPE

168. ELMERI KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG. 8:326. 1910.

PHILIPPINES: BENGUET: LUZON (ISLAND), BAGUIO (ELMER, A.D.E.,

8444. -- MAR 1907)

MO TYPE MATERIAL

US 854950 TYPE MATERIAL

169. ELRODI JONES, M.E., BULL. MONTANA STATE UNIV., BIOL. SER. 15:70. 1910.

.

USA: MONTANA: BEAVERHEAD CO.: MONIDA (JONES, M.E., ---.

08 JUL 1909)

DS 149706 I SOTYPE

NY ISOTYPE

US 1531248 TYPE MATERIAL

170. ELYNOIDES HOLM, H.T., AMER. J. SCI. SER.4, 9:356. 1900.

USA: COLORADO: MINERAL CO.: PAGOSA PEAK: ALT. 12000 FT.

(BAKER, C.F., 230. -- AUG 1899)

GH I SOTYPE

MO TYPE COLLECTION

US 368818 TYPE COLLECTION

171. ENGELMANNI BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:132.

1886 ("1887").

USA: COLORADO: EL PASO CO.: MOUNT FLORA, "PROBABLY NEAR

COLORADO SPRINGS" (ENGELMANN, G., --- 1874)

GH HOLOTYPE

172. EPAPILLOSA MACKENZIE, K.K. IN RYDBERG, P.A., FL. ROCKY MOUNT.

138, 1060. 1917.

USA: UTAH: PIUTE CO.: MARYSVALE (JONES, M.E., 5345.

01 JUN 1874)

MO ISOTYPE

NY HOLOTYPE

NY ISOTYPE

US 270933 ISOTYPE

173. EREMOSTACHYA BLAKE, S.T., J. ARNOLD ARBOR. 28:99. 1947.

INDONESIA: WEST NEW GUINEA: LAKE HABBEMA; (COUNTRY AS "DUTCH

NEW GUINEA") (BRASS, L.J., 10255. -- OCT 1938)

A I SOTYPE

174. ERXLEBENIANA KELSO, L., BIOL. LEAFL. 51:1. 1950.

USA: COLORADO: GILPIN CO.: ROLLINSVILLE (KELSO, L., 6362.

24 JUL 1948)

GH TYPE MATERIAL

175. EURYCARPA HOLM, H.T., AMER. J. SCI. SER. 4, 20:303. 1905.

USA: WASHINGTON: KLICKITAT CO.: FALCON VALLEY (SUKSDORF, W.N.,
1284. 26 JUN 1886)

CAS 242957 SYNTYPE

176. EURYCARPA VAR. ATTENUATA KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG. 26:254. 1929.

USA: WASHINGTON: KLICKITAT CO.: FALCON VALLEY (SUKSDORF, W.N., 11551. 21 AUG 1924)

CAS 246772 TYPE COLLECTION

177. EURYSTACHYA HERMANN, F.J., LEAFL. W. BOT. 8:109. 1957.

CANADA: ALBERTA: JASPER NATIONAL PARK, MOUNT EDITH CAVELL,

CAVELL LAKE (HERMANN, F.J., 13529. 28 AUG 1956)

CAS 401490 ISOTYPE

GH ISOTYPE

US 2265959 HOLOTYPE

178. EXPLORATORUM NELMES, E., BULL. MISC. INFORM. 108. 1938.

MALAYSIA: SABAH (TERRITORY): MOUNT KINABALU; ALT. 4000 FT.;

(COUNTRY AS "BORNEO") (CLEMENS, J. AND CLEMENS, M.S., 34297.

28 JUL 1933)

GH HOLOTYPE NY ISOTYPE

179. X EXSALINA LEPAGE, E., NATURALISTE CANAD. 83:133. 1956.

CANADA: QUEBEC: PIAGOCHIWI RIVER (DUTILLY, A.; LEPAGE, E. AND DUMAN, M., 32793. 29 AUG 1954)

US 2176495 ISOTYPE

-F-

180. FARGESII FRANCHET,A., BULL. SOC. PHILOM. PARIS SER.8, 7:34. 1895.

CHINA: SZECHWAN: TCHEN-KEOU-TIN (FARGES,R.P., ---.)

NY

TYPE MATERIAL

US 1123660 ISOTYPE

181. FELIPENSIS CLARKE, C.B., BULL. MISC. INFORM. ADD. SER. 8:84. 1908.

MEXICO: DAXACA: SIERRA DE SAN FELIPE; ALT. 10000 FT.

(PRINGLE, C.G., 4838. 25 AUG 1894)

GH TYPE COLLECTION

GH TYPE COLLECTION NY TYPE COLLECTION

182. FENDLERIANA BOECKELER, J.O., LINNAEA 39:135. 1875.

USA: NEW MEXICO: -- (FENDLER, A., 878. -- --- 1847) MO 1816497 TYPE COLLECTION NY TYPE

- FESTIVA DEWEY, C., AMER. J. SCI. ARTS SER. 1, 29:246. 1836. 183. USA: NORTHWEST TERRITORIES: MACKENZIE DISTRICT: GREAT BEAR LAKE ("BEAR LAKE") (RICHARDSON.J.. ---. ---) NY SYNTYPE
- 184. FESTIVA VAR. DECUMBENS HOLM, H.T., AMER. J. SCI. SER. 4, 16:20,26. 1903. USA: COLORADO: MINERAL CO.: PAGOSA PEAK (BAKER, C.F., 232. -- AUG 1899) F 122779 TYPE MATERIAL NY TYPE COLLECTION
- FESTIVA VAR. STRICTA BAILEY.L.H., MEM. TORREY BOT. CLUB 1:51. 185. 1889. USA: CALIFORNIA: -- (KELLOGG, A. AND HARFORD, W.G.W., 1073. **-- --- 1868-1869)** TYPE MATERIAL NY
- 186. FESTIVELLA MACKENZIE, K. K., BULL. TORREY BOT. CLUB 42:609. 1915. USA: WYOMING: ALBANY CO.: -- (NELSON, A., 3275. 02 JUL 1897) GH ISOTYPE NY TYPE
- 187. FETA BAILEY, L. H., BULL. TORREY BOT. CLUB 20:417. 1893. USA: CALIFORNIA: SONOMA CO.: CLOVERDALE SPRING (BOLANDER, H.N., 50. ---) GH HOLOTYPE
- 188-FILIFOLIA VAR. EROSTRATA KUKENTHAL, G. IN ENGLER, H.G.A., PFLANZENR. 4, FAM.20:86. 1909. USA: CALIFORNIA: EL DORADO CO.: ECHO LAKE (BRAINERD, E., 111. 11 JUL 1897) GH ISOTYPE
- FISSA MACKENZIE, K.K., N. AMER. FL. 18:64. 1931. 189. USA: OKLAHOMA: CREEK CO.: SAPULPA (BUSH, B.F., 1043. 18 MAY 1895) MO ISOTYPE NY
- 190. FISSA VAR. ARISTATA HERMANN, F.J., RHODORA 67:198. 1965. USA: FLORIDA: SEMINOLE CO.: OVIEDO (RAY, J.D.; WOOD, C.E.; SMITH, A.C. AND EATON, R.J., 10750. 26 APR 1961) GH HOLOTYPE NY ISOTYPE

ISOTYPE

HOLOTYPE

191. FISSURICOLA MACKENZIE, K.K., MUHLENBERGIA 5:53. 1909. USA: NEVADA: ELKO CO.: RUBY MOUNTAINS, HUMBOLDT RIVER

2449506

US

(HELLER, A.A., 9429. 11 AUG 1908) CAS 234898 ISOTYPE

- 192. FLACCIDULA STEUDEL, E.G., SYN. PL. GLUM. 2:199. 1855.
 USA: OHIO: MIAMI RIVER VALLEY (FRANK, J.C., 55. -- -- 1835)
 NY TYPE
- 193. FLACCIFOLIA MACKENZIE, K.K., ERYTHEA 8:92. 1922.
 USA: CALIFORNIA: SOUTHWEST (PART) (GRANT, G.B., ---.
 01 MAY 1902)
 US 468192 TYPE
- 194. FLACCOSPERMA DEWEY, C., AMER. J. SCI. ARTS SER.2, 2:245. 1846.

 USA: FLORIDA: CAMP SABINE (LEAVENWORTH, M.C., ---. 1846)

 GH HOLOTYPE

 NY ISOTYPE
- 195. FLAVA VAR. GASPENSIS FERNALD, M.L., RHODORA 8:200. 1906.

 CANADA: QUEBEC: BONAVENTURE CO.: BONAVENTURE RIVER, BETWEEN

 BALDE AND BAIE DES CHALEURS (COLLINS, J.F.; FERNALD, M.L. AND

 PEASE, A.S., ---. 05-08 AUG 1904)

 GH HOLOTYPE
- 196. FLAVA VAR. RECTIROSTRA GAUDIN, J.F.G.P., FL. HELV. 6:97. 1830.

 SWITZERLAND: VALAIS (CANTON): ZERMATT (---, --- AUG 1827)

 GH ISOTYPE
- 198. FORMOSA DEWEY,C., AMER. J. SCI. ARTS SER.1, 8:98. 1824.
 USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., ---. ---)
 CAS 102307 ISOTYPE
 CAS 383156 ISOTYPE
 GH ISOTYPE
- 199. FRACTA MACKENZIE, K.K., ERYTHEA 8:38. 1922.

 USA: CALIFORNIA: SISKIYOU CO.: MOUNT SHASTA (PRINGLE, C.G., ---.
 23 AUG 1881)

 US 817810 HOLOTYPE
- 200. FRANKLINII BOOTT,F. IN HOOKER,W.J., FL. BOR.-AMER. 2:217, PL.218.

 1839 ("1840").

 USA: --: ROCKY MOUNTAINS (DRUMMOND,T., ---. ---)

 GH

 ISOTYPE

 NY

 TYPE
- 201. FULVESCENS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 37:239. 1910. ST. PIERRE AND MIQUELON: --: MIQUELON (ISLAND), LANGLADE (ARSENE, L. (FRERE), ---. 28 JUL 1902)

NY TYPE

202. FUSCOLUTEA BOECKELER, J.O., BOT. JAHRB. SYST. 7:278. 1886.

MEXICO: SAN LUIS POTOSI: -- (SCHAFFNER, J.G., 221. -- --- 1877)

NY TYPE MATERIAL

US 397187 TYPE COLLECTION

203. FUSCOTINCTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:478. 1909.
MEXICO: DAXACA: SIERRA DE SAN FELIPE (PRINGLE, C.G., 4839.
19 AUG 1894)

NY TYPE
US 251773 TYPE COLLECTION
US 817237 TYPE COLLECTION

-G-

- 204. GARBERI FERNALD, M.L., RHODORA 37:253. 1935.

 USA: PENNSYLVANIA: ERIE CO.: ERIE, PRESQUE ISLE (PENINSULA)

 (GARBER, A.P., ---. 09 JUN 1869)

 GH ISOTYPE

 US 63525 TYPE MATERIAL
- 205. GARBERI VAR. BIFARIA FERNALD, M.L., RHODORA 37:253. 1935.

 CANADA: QUEBEC: GASPE CO.: WEST GASPE, SAINTE ANNE DES MONTS

 (COLLINS, J.F. AND FERNALD, M.L., ---. 03-17 AUG 1905)

 GH HOLOTYPE
- 206. GAYANA VAR. HYALINA BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:135.
 1886 ("1887").
 MEXICO: SONORA: SONORA (THURBER, G., 652. ---)
 NY
 TYPE
- 207. GEOPHILA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 40:546. 1913. USA: NEW MEXICO: RIO ARRIBA CO.: TIERRA AMARILLA (EGGLESTON, W.W., 6584. 18 APR-25 MAY 1911)
 US 660800 TYPE
- 208. GEYERI BOOTT, F., TRANS. LINN. SOC. LONDON 20:118. 1846.

 USA: --: ROCKY MOUNTAINS (GEYER, C.A., 332. ---)

 NY TYPE COLLECTION
- 209. GLAREOSA VAR. AMPHIGENA FERNALD, M.L., RHODORA 8:47. 1906.

 CANADA: QUEBEC: BONAVENTURE CO.: ESCUMINAC BAY, ESCUMINAC

 (FERNALD, M.L., ---. 28 JUN 1904)

 GH HOLOTYPE

 NY ISOTYPE
- 210. GLAUCODEA TUCKERMAN, E. EX OLNEY, S.T. IN GRAY, A.,
 PROC. AMER. ACAD. ARTS 7:395. 1868.
 USA: MASSACHUSETTS: HAMPSHIRE CO.: MOUNT HOLYOKE (TUCKERMAN, E.,
 ---- JUN 1864)

GH ISOTYPE

211. GRACILIOR MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:614. 1916.
USA: CALIFORNIA: SONOMA CO.: CLOVERDALE (BOLANDER, H.N., 3822.
-- APR 1864)

CAS 103033 ISOTYPE
DS 145620 HOLOTYPE
GH ISOTYPE
MO ISOTYPE
US 319177 ISOTYPE

212. GRACILLIMA SCHWEINITZ, L.D., ANN. LYCEUM NAT. HIST. NEW YORK 1:66.

USA: PENNSYLVANIA: -- (SCHWEINITZ, L.D., ---. ---)
GH ISOTYPE

- 213. GRIFFITHII BOOTT, F., TRANS. LINN. SOC. LONDON 20:138. 1846.

 AFGHANISTAN: --: -- (GRIFFITH, W., 78(KEW 6074). ---)

 NY

 TYPE COLLECTION
- 215. GUATEMALENSIS HERMANN, F.J., BRITTONIA 23:145. 1971.

 GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, BETWEEN

 TOJIAH AND CHEMAL; ALT. 3380 M. (BEAMAN, J. H., 3880.

 31 JUL 1960)

 GH HOLOTYPE
- 216. GYMNOCLADA HOLM, H.T., AMER. J. SCI. SER.4, 14:424. 1902.
 USA: OREGON: HURRICANE CREEK; BOGS AT 6000 FT. (CUSICK, W.C., 2487. 28 AUG 1900)

MO TYPE MATERIAL NY ISOTYPE

217. GYNODYNAMA OLNEY, S.T. IN GRAY, A., PROC. AMER. ACAD. ARTS 7:394.
1868.

USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER, H.N., 4700. -- --- 1866)

CAS 383986 ISOTYPE
DS 49500 ISOTYPE
DS 490408 ISOTYPE
NY ISOTYPE

+H-

218. HAGIANA KELSO,L., BIOL. LEAFL. 30:2. 1945.
USA: COLORADO: HAGUES PEAKS (KELSO,L. AND KELSO,E.H., 525.
C8 AUG 1936)

CAS 328017 ISOTYPE

219. HALEI DEWEY, C., AMER. J. SCI. ARTS SER. 2, 2:248. 1846. USA: LOUISIANA: MISSISSIPPI RIVER (LEAVENWORTH, M.C. AND HALE, D., 683. ---1 NY SYNTYPE

220-HALLIANA BAILEY, L. H., BOT. GAZ. 9:117. 1884. USA: OREGON: -- (HALL, E., 606. -- --- 1871) TYPE COLLECTION GH

221. HALLII OLNEY, S.T. IN PORTER, T.C. IN HAYDEN, F.V., ANN. REP. U.S. GEOL. SURV. TERR. 5:496. 1872. USA: COLORADO: ROCKY MOUNTAINS; LAT. 39-41 N. (HALL, E. AND HARBOUR, J.P., 617. -- --- 1862)

F 314892 SYNTYPE F 456958 SYNTYPE GH SYNTYPE MO SYNTYPE NY SYNTYPE US 29651 SYNTYPE

USA: IDAHO: PLEASANT VALLEY (PORTER, T.C., ---. 26-29 JUN 1871) NY SYNTYPE

222. HALSEYANA DEWEY, C., AMER. J. SCI. ARTS SER. 1, 11:313. 1826. USA: MASSACHUSETTS: HAMPDEN CO.: WESTFIELD (DAVIS, E., ---. ---}

> GH HOLOTYPE NY I SOT YPE

HARFORDII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:615. 1916. 223. USA: CALIFORNIA: -- (KELLOGG, A. AND HARFORD, W.G. W., 1073. -- --- 1868-1869)

> NY HOLOTYPE US 28685 ISOTYPE

224. HARPERI FERNALD, M.L., RHODORA 8:181. 1906.

NY

USA: GEORGIA: JEFFERSON CO.: LOUISVILLE, ROCKY COMFORT CREEK (HARPER, R.M., 2109. 09 APR 1904)

F 176870 ISOTYPE GH HOLOTYPE NY ISOTYPE

- 225. HASSEI BAILEY, L. H., BOT. GAZ. 21:5. 1896. USA: CALIFORNIA: SAN BERNARDINO CO.: SAN BERNARDINO MOUNTAINS. SAN ANTONIO CANYON; ALT. 4500 FT. (HASSE, H.E., ---. -- JUL 1894) TYPE COLLECTION
- 226. HATUSIMANA OHWI, J., JAP. J. BOT. 7:196. 1934. TAIWAN: FUKIEN: KAOHSIUNG ("TAKAO"), DAIJURIN (OHWI, J., 329. -- MAR 1933) 1411493 TYPE MATERIAL F

227. HAYDENIANA OLNEY,S.T. IN WATSON,S.,
BOT. U.S. GEOL. EXPLOR. 40TH PAR. 366. 1871.
USA: CALIFORNIA: TUOLUMNE CO.: MOUNT DANA (BOLANDER, H.N., 5074.

230. HELLERI MACKENZIE, K.K., ERYTHEA 8:80. 1922.
USA: NEVADA: WASHOE CO.: MOUNT ROSE (HELLER, A.A., 9975.
23 JUL 1910)
F 283119 TYPE MATERIAL

NY TYPE US 509004 ISOTYPE

231. HEPBURNII BOOTT, F. IN HOOKER, W.J., FL. BOR.-AMER. 2:209, PL.207.

1839 ("1840").

USA: COLORADO: ROCKY MOUNTAINS, SOUTH PARK (DRUMMOND, T., 256.

---)

GH SYNTYPE

232. HETERONEURA BOOTT, W. IN WATSON, S., GEOL. SURV. CALIFORNIA, BOT. 2:239. 1880.
USA: CALIFORNIA: LAKE TAHOE TO BEAR VALLEY (KELLOGG, A., ---. 03 AUG ----)

GH TYPE MATERIAL US 28206 TYPE COLLECTION

233. HETEROSTACHYA TORREY, J. EX DEWEY, C., AMER. J. SCI. ARTS
SER. 2, 2:248. 1846.
USA: MICHIGAN: CHIPPEWA CO.: DRUMMOND ISLAND (TORREY, J., --03 AUG 1839)

NY TYPE

234. HINDSII VAR. BREVIGLUMA KUKENTHAL,G. IN ENGLER,H.G.A., PFLANZENR.
4, FAM.20:307. 1909.
USA: IDAHO: BONNER CO.: HOPE (SANDBERG,J.H., 933. 20 AUG 1892)
NY ISOTYPE

235. HIRSUTA VAR. CUSPIDATA DEWEY, C. IN WOOD, A., CLASS-BOOK BOT. 758.
1861.
USA: ILLINOIS: -- (VASEY, G., ---.)
NY TYPE COLLECTION

- 236. HITCHCOCKIANA DEWEY,C., AMER. J. SCI. ARTS SER.1, 10:274. 1826.
 USA: MASSACHUSETTS: BERKSHIRE CO.: WILLIAMSTOWN, SADDLE
 MOUNTAIN (DAVIS,E., --- 1823)
 GH HOLOTYPE
- 237. HOLMIANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:481. 1909. USA: MONTANA: JOHN'S LAKE (VREELAND, F.K., 1121. 19 AUG 1901)
 NY TYPE
- 238. HODDIT VAR. NERVOSA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:14. 1889.
 USA: CALIFORNIA: -- (KELLOGG, A. AND HARFORD, W.G.W., 1069.
 -- -- 1868-1869)
 CAS 103098 SYNTYPE
 NY SYNTYPE
- 239. HOODII VAR. NEUROCARPA PIPER,C.V., CONTR. U.S. NATL. HERB. 11:167.
 1906.
 USA: CALIFORNIA: -- (KELLOGG,A. AND HARFORD,W.G.W., 1069.
 -- -- 1868-1869)
 CAS 103098 SYNTYPE
 NY SYNTYPE
- 240. HOOKERANA DEWEY,C., AMER. J. SCI. ARTS SER.1, 29:248. 1836.

 CANADA: SASKATCHEWAN: CARLTON HOUSE (52 51°N., 106 13°W.)

 (RICHARDSON,J., ---. ---)

 GH

 TYPE COLLECTION

 NY

 TYPE COLLECTION
- 241. HORMATHODES FERNALD, M.L., RHODORA 8:165. 1906.

 USA: RHODE ISLAND: PROVIDENCE CO.: PROVIDENCE (OLNEY, S.T., ---.

 O1 JUL 1867)

 GH SYNTYPE
- 242. HORNSCHUCHIANA VAR. LAURENTIANA FERNALD, M.L. AND WIEGAND, K.M., RHODORA 13:130. 1911.

 CANADA: NEWFOUNDLAND: PORT AU PORT BAY, TABLE MOUNTAIN (FERNALD, M.L. AND WIEGAND, K.M., 2897. 16 AUG 1910)

 GH HOLOTYPE

 NY ISOTYPE
- 243. HOSTIANA VAR. LAURENTIANA FERNALD, M.L. AND WIEGAND, K.M., RHODORA
 26:122. 1924.
 CANADA: NEWFOUNDLAND: PORT AU PORT BAY, TABLE MOUNTAIN
 (FERNALD, M.L. AND WIEGAND, K.M., 2897. 16 AUG 1910)
 GH HOLOTYPE
- 244. HOUGHTONIANA TORREY, J. EX DEWEY, C., AMER. J. SCI. ARTS
 SER.1, 30:63. 1836.
 USA: MINNESOTA: CLEARWATER CO.: LAKE ITASCA ("LAKE LA BICHE,
 NEAR SOURCES OF MISSISSIPPI RIVER") (HOUGHTON, D., ---.
 13 JUL 1832)
 NY HOLOTYPE

- 245. HUEHUETECA STANDLEY, P.C. AND STEYERMARK, J.A.,
 PUBL. FIELD MUS. NAT. HIST., BOT. SER. 23:195. 1947.
 GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, CANANA;
 ALT. 2500 M. (STEYERMARK, J.A., 49055. 18 JUL 1942)
 F 1128957 HOLOTYPE
- 246. HYMENODON OHWI, J., ACTA PHYTOTAX. GEOBOT. 1:298. 1932.

 JAPAN: --: HONSHU (ISLAND), OSAWAMURA IN SHIMOTSUKE

 (SEKIMOTO, H., ---. 15 JUL 1932)

 F 1463659 TYPE MATERIAL

-1-

- 247. ICHANGENSIS CLARKE, C.B., J. LINN. SOC., BOT. 36:290. 19C3.
 CHINA: HUPEH: -- (HENRY, A., 7860. -- -- 1885-1888)
 US 802160 TYPE MATERIAL
- 248. IDAHOA BAILEY, L.H., BOT. GAZ. 21:5. 1896.

 USA: IDAHO: BEAVER CANYON (RYDBERG, P.A., 2339. 07 AUG 1895)

 US 235568 TYPE COLLECTION

 US 235569 TYPE COLLECTION
- 249. IGNOTA DEWEY,C., AMER. J. SCI. ARTS SER.2, 8:348. 1849.
 USA: LOUISIANA: RAPIDES PARISH: ALEXANDRIA (HALE,D., 97. ---)
 CAS 553902 TYPE COLLECTION
 NY TYPE COLLECTION
- 250. ILLINOENSIS DEWEY,C., AMER. J. SCI. ARTS SER.2, 3:245. 1847.
 USA: ILLINOIS: HANCOCK CO.: AUGUSTA (MEAD,S.B., ---.)
 NY
 TYPE COLLECTION
- 251. ILLOTA BAILEY,L.H., MEM. TORREY BOT. CLUB 1:15. 1889.

 USA: COLORADO: ROCKY MOUNTAINS; LAT. 39-41 N. (HALL,E. AND HARBOUR,J.P., 591. -- -- 1862)

 F 314869 ISOTYPE
 F 456934 ISOTYPE
 GH HOLOTYPE
 MO ISOTYPE
- 252. INCISO-DENTATA STEUDEL, E.G., SYN. PL. GLUM. 2:189. 1855.
 CHILE: --: -- (LECHLER, W., 1136. -- OCT 1852)
 GH ISOTYPE
- 253. INCOMPERTA BICKNELL, E.P., BULL. TORREY BOT. CLUB 35:494. 1908.
 USA: MASSACHUSETTS: NANTUCKET CO.: NANTUCKET ISLAND
 (BICKNELL, E.P., ---. 20 JUN 1908)
 NY TYPE
- 254. INCONDITA HERMANN, F.J., LEAFL. W. BOT. 8:112. 1957.
 CANADA: ALBERTA: RAM RIVER, NORDEGG (HERMANN, F.J., 13347.
 15 AUG 1956)

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CAS 404489 ISOTYPE US 2265956 HOLOTYPE
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255. INCURVIFORMIS MACKENZIE, K.K. IN RYDBERG, P.A., FL. ROCKY MOUNT. 120, 1960. 1917.

CANADA: ALBERTA: BANFF NATIONAL PARK, BANFF; ALT. 8000 FT. (MACOUN, JOHN, ---. 31 JUL 1891)

GH I SOTYPE
NY HOLOTYPE

256. INFLATA VAR. ANTICOSTENSIS FERNALD, M.L., RHODORA 44:329, PL.715. 1942.

CANADA: QUEBEC: ANTICOSTI ISLAND, PETITES-RIVIERES
(MARIE-VICTORIN, (FRERE) AND ROLLAND-GERMAIN, (FRERE), 25767.
20 JUL 1926)

GH HOLOTYPE

257. INOPS BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:126. 1886 ("1887").
USA: OREGON: CLACKAMAS CO.: MOUNT HOOD (HENDERSON, L.F., ---.

-- JUL 1884)

CAS 203910 ISOTYPE GH HOLOTYPE NY ISOTYPE

- 258. INTEGRA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:608. 1916.
 USA: CALIFORNIA: PLACER CO.: SUMMIT; ALT. 7000 FT.
 (HELLER, A.A., 9841. 16 JUL 1909)
 NY HOLOTYPE
- 259. INTERIMUS MAGUIRE, B., BRITTONIA 5:20C. 1944.
 USA: UTAH: CACHE CO.: TONY GROVE LAKE (MAGUIRE, B., 16098.
 05 AUG 1938)

CAS 348506 ISOTYPE
GH ISOTYPE
NY TYPE
US 1872574 ISOTYPE

260. INTERIOR BAILEY, L.H., BULL. TORREY BOT. CLUB 20:426. 1893.

USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., 36. ---)

CAS 553999 ISOTYPE

MO 1816496 TYPE COLLECTION NY ISOTYPE

261. INTERIOR VAR. CHARLESTONENSIS CLOKEY, I.W.,

BULL. S. CALIF. ACAD. SCI. 38:1. 1939.

USA: NEVADA: CLARK CO.: CHARLESTON PARK (CLOKEY, I.W., 7468. 19 JUN 1937)

CAS 272528 ISOTYPE CAS 272529 ISOTYPE DS 278190 ISOTYPE F 1076930 **ISOTYPE** GH **ISOTYPE** JEPS 4013 ISOTYPE

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MO
      1148381
               ISOTYPE
MO
      1190731
                ISOTYPE
MO
      1201697
                ISOTYPE
NY
                ISOTYPE
UC
       910020
                HOLOTYPE
US
      1733722
                ISOTYPE
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262. INTERIOR VAR. JOSSELYNII FERNALD, M.L., RHODORA 8:115. 1906.

USA: MAINĖ: AROOSTOOK CO.: SAINT JOHN RIVER, FORT KENT

(FERNALD, M.L., ---. 06 JUL 1904)

GH HOLOTYPE
NY ISOTYPE
US 605797 ISOTYPE

263. INTERIOR VAR. KEWEENAWENSIS HERMANN, F.J., AMER. MIDL. NATURALIST 25:19. 1941.

USA: MICHIGAN: KEWEENAW CO.: EAGLE HARBOR (HERMANN, F.J., 7985.

13 JUL 1936)

GH HOLOTYPE ISOTYPE US 1697057 ISOTYPE

264. INTERRUPTA VAR. DISTENTA KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG. 26:254. 1929.

USA: WASHINGTON: KLICKITAT CO.: BINGEN (SUKSDORF, W.N., 12333. 22 AUG-05 SEP 1927)

CAS 242959 TYPE COLLECTION

265. INTUMESCENS FOR. VENTRIOSA FERNALD, M.L., RHODORA 44:321, PL.713.

USA: VERMONT: ADDISON CO.: RIPTON (BRAINERD, E., ---.

19 JUL 1898)

GH HOLOTYPE

266. INVOLUCRATELLA MACKENZIE, K.K., N. AMER. FL. 18:50. 1931.

MEXICO: SAN LUIS POTOSI: LAS CANOAS (PRINGLE, C.G., 3126.

08 JUL 1890)

F 263394 TYPE COLLECTION
GH ISOTYPE
MO TYPE MATERIAL
NY TYPE COLLECTION

US 30661 TYPE COLLECTION

-J-

267. JACINTOENSIS PARISH, S.B., BULL. S. CALIF. ACAD. SCI. 4:100, PL.16.

USA: CALIFORNIA: RIVERSIDE CO.: SAN JACINTO MOUNTAINS, TAMARACK VALLEY; ALT. 9000 FT. (HALL, H.M., 2483.

-- JUL-AUG 1901)

DS 78003 HOLOTYPE

268. JACOBI-PETERI HULTEN, D.E.G., ACTA UNIV. LUND. N.S., 38:300, FIG. 4.
1942.
USA: ALASKA: TIN CITY (ANDERSON, 1.P., 4871, 19 AUG. 1938)

USA: ALASKA: TIN CITY (ANDERSON, J.P., 4871. 19 AUG 1938)
CAS 477664 ISOTYPE

- 269. JAMESII TORREY, J., ANN. LYCEUM NAT. HIST. NEW YORK 3:398. 1836.
 USA: --: ROCKY MOUNTAINS (JAMES, EDWIN, ---. ---)
 NY HOLOTYPE
- 270. JAMESONI VAR. SUBFULVA KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 8:7. 1910.
 BOLIVIA: --: -- (BANG, M., 2376. ---)

BOLIVIA: --: -- (BANG, M., 2376. ---)
US 825890 TYPE MATERIAL

NY

NY

271. JEPSONII HOWELL, J.T., LEAFL. W. BOT. 8:223. 1958.
USA: CALIFORNIA: TUOLUMNE CO.: YOSEMITE NATIONAL PARK,
TUOLUMNE MEADOWS; ALT. 8800 FT. (JEPSON, W.L., 4477.
20 JUL 1911)
JEPS 20008 ISOTYPE

272. JONESII BAILEY, L. H., MEM. TORREY BOT. CLUB 1:16. 1889.

USA: CALIFORNIA: NEVADA CO.: SODA SPRINGS; ALT. 7000 FT.

(JONES, M.E., ---. 22 JUL 1881)

HOLOTYPE

SYNTYPE

-K-

- 273. KALDIDES PETRIE, D., TRANS. & PROC. NEW ZEALAND INST. 13:332. 1881.

 NEW ZEALAND: OTAGO (DISTRICT): SOUTH ISLAND, CARRICK RANGE;

 ALT. 4000 FT. (PETRIE, D., ----)

 GH ISOTYPE
- 274. KATAHDINENSIS FERNALD, M.L., RHODORA 3:171, PL.32. 1901.

 USA: MAINE: PISCATAQUIS CO.: MOUNT KATAHDIN, DEPOT POND

 (WILLIAMS, E.F.; CHURCHILL, J.R. AND FERNALD, M.L., ---.

 16 JUL 1900)

GH HOLOTYPE
NY ISOTYPE
US 1325047 ISOTYPE

- 275. KAUAIENSIS KRAUSS,R., PACIFIC SCI. 4:279. 1950.
 USA: HAWAII: KAUAI CO.: KAULUWEHI (ROCK, J.F., 9017.
 -- OCT 1909)
 US 207470C TYPE MATERIAL
- 276. KELLOGGII BOOTT, W. IN WATSON, S., GEOL. SURV. CALIFORNIA, BOT. 2:240. 1880. USA: CALIFORNIA: SIERRA NEVADA RANGE, "LAKE TAHOE TO BEAR VALLEY" (KELLOGG, A., ---.

GH SYNTYPE

- 277. KOKRINENSIS PORSILD, A.E., RHODORA 41:206, PL.551. 1939.

 USA: ALASKA: KOKRINES MOUNTAINS (PORSILD, A.E. AND PORSILD, R.T.,
 711. 23 JUN-05 JUL 1926)

 GH ISOTYPE
- 278. KULINGANA BAILEY, L. H., GENTES HERB. 1:13. 1920.
 CHINA: KIANGSI: KULING; ALT. 2500-3500 FT. (BAILEY, L. H., ---.
 18 JUL 1917)
 NY TYPE
- 279. KURILENSIS OHWI,J., 'ACTA PHYTOTAX. GEOBOT. 2:27. 1933.

 USSR: RUSSIAN SFSR: SAKHALIN OBLAST: KURIL ISLANDS, SHIKOTAN

 (ISLAND), NOTORO; (COUNTRY AS "JAPAN") (OHWI,J., 813.

 11 AUG 1931)

 F 1406403 TYPE MATERIAL

-L-

- 280. LACINIATA BOOTT, F., ILL. GENUS CAREX 4:175, PL.594. 1867.
 USA: CALIFORNIA: SACRAMENTO RIVER (RICH, WILLIAM,
 WILKES EXPED. 1241. -- -- 1838-1842)
 NY
 TYPE
- 281. LACUNARUM HOLM, H.T., AMER. J. SCI. SER.4, 17:316. 1904.

 USA: CALIFORNIA: SONOMA CO.: SEBASTOPOL (HELLER, A.A., 5797.

 C1 JUL 1902)

 F 129242 SYNTYPE

 F 1566419 SYNTYPE

F 1566419 SYNTYPE
MO SYNTYPE
NY SYNTYPE
US 430229 SYNTYPE

- 282. LAEVI-CONICA DEWEY, C., AMER. J. SCI. ARTS SER.2, 24:47. 1857.
 USA: NEBRASKA: BIG SIOUX RIVER (HAYDEN, F.V., ---. ---)
 GH HOLOTYPE
- 283. LAMPROCHLAMYS BLAKE, S.T., J. ARNOLD ARBOR. 28:1C4. 1947.

 PAPUA AND NEW GUINEA: PAPUA (TERRITORY): MAFULU; (COUNTRY AS

 "BRITISH NEW GUINEA") (BRASS, L.J., 5323. -- SEP-NOV 1933)

 A ISOTYPE
- 284. LANCIFOLIA CLARKE, C.B., J. LINN. SOC., BOT. 36:292. 1903. CHINA: HUPEH: -- (HENRY, A., 5467. ---)
 US 801132 SYNTYPE
- 285. LANCIFRUCTUS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:607. 1916.

 USA: CALIFORNIA: TULARE CO.: UPPER KERN RIVER, VOLCANO CREEK

 (HALL, H.M. AND BABCOCK, H.D., 5472. -- JUL 1904)

 NY ISOTYPE

UC 127723 HOLOTYPE

LANGEANA FERNALD, M.L., RHODORA 35:217. 1933. 286. CANADA: NEWFOUNDLAND: GARGAMELLE COVE (FERNALD, M. L.; LONG, B. AND FOGG-JR., J.M., 1374. 20 JUL 1929) 1481645 ISOTYPE GH HOLOTYPE

287. LARENSIS STEYERMARK, J.A., FIELDIANA, BOT. 28:66, FIG.8. 1951. VENEZUELA: LARA: BETWEEN BUENOS AIRES AND PARAMO DE LAS ROSAS (STEYERMARK, J.A., 55470. 11 FEB 1944) F 55470 HOLOTYPE

US 1932015 ISOTYPE

- LARICINA MACKENZIE, K.K. EX BRIGHT, J., TRILLIA 9:4,19. 1930. 288. USA: INDIANA: KOSCIUSKO CO.: LEESBURG (DEAM, C.C., 10927. C5 JUN 1912) NY TYPE
- 289. LASIOCARPA VAR. AMERICANA FERNALD, M.L., RHODORA 44:304. 1942. CANADA: NOVA SCOTIA: YARMOUTH CO.: ARGYLE (PEASE, A.S. AND LONG, B., 20519. 09 JUL 1920) GH HOLOTYPE
- LATEBRACTEATA WATERFALL, U.T., RHODORA 56:23. 1954. 290. USA: OKLAHOMA: MCCURTAIN CO.: BROKEN BOW (WATERFALL, U.T., 11380. 19 APR 1953) CAS 384438 ISOTYPE GH ISOTYPE MΩ 1692174 ISOTYPE
- 291. LAXIFLORA VAR. LEPTONERVIA FERNALD, M.L., RHODORA 8:184. 1906. USA: MAINE: AROOSTOOK CO.: FORT FAIRFIELD (FERNALD, M.L., 146. 06 JUL 1893)

F 267758 ISOTYPE GH HOLOTYPE MO ISOTYPE NY ISOTYPE

- LAXIFLORA VAR. SERRULATA HERMANN, F.J., RHODORA 40:80. 1938. 292. USA: INDIANA: CLARK CO.: -- (DEAM, C.C., 6458. 25 MAY 1910) GH HOLOTYPE NY ISOTYPE
- LEAVENWORTHII DEWEY, C., AMER. J. SCI. ARTS SER. 2, 2:246. 1846. 293 USA: LOUISIANA: -- (LEAVENWORTH, M.C., ---. -- -1845) NY TYPE COLLECTION
- 294. LEIOCARPA MEYER, C.A., MEM. ACAD. IMP. SCI. ST.-PETERSBOURG DIVERS SAVANS 1:208, PL.5. 1831. USA: ALASKA: SITKA (MERTENS, C.H., ---. ---) GH ISOTYPE

295. LEIOPHYLLA MACKENZIE, K.K., N. AMER. FL. 18:365. 1935.

CANADA: YUKON TERRITORY: CARCROSS (EASTWOOD, A., 725A.

16 JUL 1914)

CAS 102481 ISOTYPE

GH ISOTYPE

538796

US

NY

296. LEMANNIANA VAR. SIMPLEX KUKENTHAL,G. IN ENGLER,H.G.A., PFLANZENR.
4, FAM.20:405. 1909.
COSTA RICA: --: CERRO DE BUENA VISTA (PITTIER,H. AND TONDUZ,A.,
3381. 19 JAN 1891)
CAS 264341 SYNTYPE

HOLOTYPE

297. LEMMONI BOOTT, W., BOT. GAZ. 9:93. 1884.

USA: CALIFORNIA: SIERRA NEVADA RANGE (LEMMON, J.G., ---.
1875)

GH TYPE COLLECTION

US 29211 TYPE COLLECTION

298. LENTICULARIS VAR. PAULLIFRUCTUS KUKENTHAL, G. IN ENGLER, H.G.A.,
PFLANZENR. 4, FAM. 20:308. 1909.
USA: WASHINGTON: WHITMAN CO.: PALOUSE CREEK (ELMER, A.D.E., 881.
-- JUN 1897)
NY ISOTYPE

299. LEPORINA VAR. AMERICANA OLNEY, S.T. EX BAILEY, L.H.,
PROC. AMER. ACAD. ARTS 22:152. 1886 ("1887").
USA: OREGON: CLACKAMAS CO.: MOUNT HOOD (HALL, E., 583.
O1 AUG 1871)

F 455706 TYPE COLLECTION
F 1425899 TYPE COLLECTION
GH TYPE COLLECTION
MO TYPE COLLECTION

300. LEPORINELLA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:605. 1916.
USA: CALIFORNIA: EL DORADO CO.: PYRAMID PEAK (HALL, H.M. AND
CHANDLER, H.A., 4716. 01-02 AUG 1903)
DS 490443 ISOTYPE

TYPE COLLECTION

DS 490443 ISOTYPE GH ISOTYPE UC 55234 HOLOTYPE

301. LEPTOPODA MACKENZIE,K.K. IN RYDBERG,P.A., FL. ROCKY MOUNT.

124, 1060. 1917.

USA: OREGON: CLACKAMAS CO.: OSWEGO, ELK ROCK (HELLER,A.A.,

10052. 20 MAY 1910)

CAS 186427 ISOTYPE

DS 13923 ISOTYPE

NY TYPE

302. LIMNOPHILA HERMANN, F.J., LEAFL. W. BOT. 8:28. 1956.
USA: WYOMING: SUBLETTE CO.: PINEDALE (HERMANN, F.J., 12252.

21 AUG 1955) US 2231577 HOLOTYPE

- 303. LIVIDA VAR. RUFINAEFORMIS FERNALD, M.L., RHODORA 28:8. 1926.

 CANADA: NEWFOUNDLAND: STRAIT OF BELLE ISLE, FOUR-MILE COVE

 (FERNALD, M.L.; WIEGAND, K. M. AND LONG, B., 27673. 20 JUL 1925)

 GH HOLOTYPE
- 304. LONGICRURIS VAR. HENRYI CLARKE, C.B., J. LINN. SOC., BOT. 36:295.
 1903.
 CHINA: HUPEH: -- (HENRY, A., 4266. ---)

CHINA: HUPEH: -- (HENRY,A., 4266. ---)
US 800846 SYNTYPE

305. LONGICULMIS PETRIE, D., TRANS. & PROC. NEW ZEALAND INST. 14:363. 1882.

NEW ZEALAND: OTAGO (DISTRICT): SOUTHLAND SUBDIVISION: STEWART ISLAND, PATTERSONS INLET (PETRIE, D., ---. -- JAN 1880)

GH ,ISOTYPE

306. LONGIROSTRIS VAR. MICROCYSTIS BOECKELER, J.O., LINNAEA 41:241. 1877.

CANADA: MANITOBA: WINNIPEG (BOURGEAU, E., ---.

-- --- 1857-1859)

NY TYPE COLLECTION

307. LUNELLIANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:615. 1915. USA: MISSOURI: JACKSON CO.: OAK GROVE (BUSH, B.F., 7020. C2 JUN 1913)

NY TYPE

308. LUZULAEFOLIA VAR. STROBILANTHA HOLM, H.T., AMER. J. SCI. SER.4, 20:305. 1905.

USA: CALIFORNIA: NEVADA CO.: DONNER PASS; ALT. 7500 FT.

(HELLER, A.A., 7187. 17 AUG 1903) CAS 136 ISOTYPE

CAS 231121 ISOTYPE

309. LUZULINA OLNEY, S.T. IN GRAY, A., PROC. AMER. ACAD. ARTS 7:395.

USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER, H.N., 4740. -- -- 1866)

CAS 384084 ISOTYPE DS 76794 ISOTYPE

GH TYPE COLLECTION
MO TYPE MATERIAL
NY TYPE COLLECTION
US 964880 TYPE COLLECTION

-M-

310. MACKENZIANA WEATHERBY, C.A., CONTR. GRAY HERB. 114:36. 1936.

MEXICO: NUEVO LEON: GALEANA (MULLER, C.H. AND MULLER, M.T., 892. 28 JUN 1934)

CAS 264346 ISOTYPE GH HOLOTYPE US 1746479 ISOTYPE

311. MACROGLOSSA FRANCHET, A. AND SAVATIER, L., ENUM. PL. JAP. 2:148, 576. 1879.

JAPAN: KANAGAWA (PREFECTURE): HONSHU (ISLAND), YOKOSUKA (SAVATIER, L., 1414. -- -- 1866-1874)

US 27238 TYPE MATERIAL

- 313. MACROSPERMA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:477. 1909.

 MEXICO: OAXACA: SIERRA DE SAN FELIPE; ALT. 6000-7000 FT.

 (PRINGLE, C.G., 4840. 27 AUG 1894)

 NY TYPE
- 314. MADRENSIS BAILEY, L.H., BOT. GAZ. 25:270. 1898.

 MEXICO: DURANGO: SIERRA MADRE OCCIDENTAL (ROSE, J.N., 2357.

 16 AUG 1897)

 NY ISOTYPE

 US 301267 TYPE
- 315. MAGNIFOLIA MACKENZIE, K.K. IN SMALL, J.K., FL. SE. U.S. ED.2, 1325.
 1913.
 USA: FLORIDA: -- (CHAPMAN, A.W., ---. ---)
 US 969118 TYPE MATERIAL
- 316. MANDONIANA BOECKELER, J.O., ALLG. BOT. Z. SYST. 2:174. 1896.
 BOLIVIA: --: -- (MANDON, G., 1429. ---)
 NY ISOTYPE
- 317. MARCIDA VAR. DEBILIS BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:136.
 1886 ("1887").
 USA: OREGON: HARNEY CO.: HARNEY VALLEY (HOWELL, T.J., 937.
 27 MAY 1885)
 F 206587 TYPE COLLECTION
- 318. MARIPOSANA BAILEY, L.H., BULL. TORREY BOT. CLUB 43:619. 1916.
 USA: CALIFORNIA: TUOLUMNE CO.: YOSEMITE NATIONAL PARK,
 TUOLUMNE MEADOWS (JEPSON, W.L., 4476. 20 JUL 1911)
 JEPS 19722 ISOTYPE
 NY HOLOTYPE

TYPE

NY

319. MEADII DEWEY, C., AMER. J. SCI. ARTS SER.1, 43:90. 1842.

USA: ILLINOIS: HANCOCK CO.: AUGUSTA (MEAD, S.B., ---. ---)

CAS 553885 ISOTYPE

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GH HOLOTYPE
MO ISOTYPE
NY ISOTYPE
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320. MEDITERRANIA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 33:441. 1906. USA: DISTRICT OF COLUMBIA: WASHINGTON (STEELE, E.S., ---. 23 MAY 1898)

NY TYPE

- 321. MEEKII DEWEY,C., AMER. J. SCI. ARTS SER.2, 24:48. 1857.
 USA: NEBRASKA: WHITE RIVER (HAYDEN,F.V., ---. ---)
 GH TYPE COLLECTION
- 322. MELANOPHORA BLAKE, S.T., J. ARNOLD ARBOR. 28:106. 1947.
 INDONESIA: WEST NEW GUINEA: ORANGE RANGE, MOUNT WILHELMINA;
 (COUNTRY AS "DUTCH NEW GUINEA") (BRASS, L.J. AND
 MEYER-DREES, E., 9828. -- SEP 1938)

 A ISOTYPE
- 323. MELOZITNENSIS PORSILD, A.E., RHODORA 41:209. 1939.

 USA: ALASKA: KOKRINES MOUNTAINS, MELOZITNA RIVER (PORSILD, A.E.

 AND PORSILD, R.T., 713. 23 JUN-05 JUL 1926)

 GH ISOTYPE

 US 1789621 ISOTYPE
- 324. MENDOCINENSIS OLNEY,S.T. EX BOOTT,W. IN WATSON,S.,
 GEOL. SURV. CALIFORNIA, BOT. 2:249. 1880.
 USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER,H.N.,
 4701. -- --- 1866)
 CAS 553875 TYPE FRAGMENT

DS 54832 ISOTYPE
GH HOLOTYPE
MO ISOTYPE
NY ISOTYPE
UC 1098 ISOTYPE
US 29453 ISOTYPE

- 325. MERCARENSIS HOCHSTETTER, C.F. EX STEUDEL, E.G., SYN. PL. GLUM. 2:194.
 1855.
 INDIA: --: NILAGIRI (HOHENACKER, R.F., 943. -- --- 1851)
- 326. MERRILLII KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 8:7. 1910.
 PHILIPPINES: BENGUET: LUZON (ISLAND), PAUAI (MERRILL,E.D.,
 6623. -- MAY 1909)

ISOTYPE

NY TYPE MATERIAL US 711171 TYPE MATERIAL

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327. MERRITT-FERNALDII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 49:370.
1923.
USA: MAINE: PENOBSCOT CO.: ORONO (FERNALD, M.L., ---.

O3 JUL 1897)

GH HOLOTYPE

- 329. MICANS BOOTT, F. IN GRAY, A., MEM. AMER. ACAD. ARTS N.S., 6:419.
 1859.
 JAPAN: --: SINODA (WRIGHT, C., ---.)
 US 27281 TYPE MATERIAL
- 330. MICRANTHA KUKENTHAL,G., BULL. HERB. BOISSIER SER.2, 2:1018. 1902. KOREA: --: KAM-OUEN (FAURIE,U., 919. 28 JUN 1901) US 2501314 ISOTYPE
- 331. MICROCHAETA HOLM, H.T., AMER. J. SCI. SER.4, 17:305. 1904.

 CANADA: YUKON TERRITORY: KLONDIKE, INDIAN DIVIDE (MACOUN, JOHN, 53877. 14 AUG 1902)

 GH ISOTYPE
- 332. MICROGLOCHIN SSP. FUEGINA KUKENTHAL,G., BOT. JAHRB. SYST. 27:546.
 1899.
 CHILE: MAGALLANES: TIERRA DEL FUEGO ("FUEGIA"), ORANGE HARBOR
 (WILKES EXPLOR. EXPED., ---. 1838-1842)
 US 30695 ISOTYPE
- 333. MICROPTERA MACKENZIE, K.K., MUHLENBERGIA 5:56. 1909.
 USA: NEVADA: ELKO CO.: DEETH (HELLER, A.A., 9067. 21 JUL 1908)
 CAS 234896 ISOTYPE
 NY TYPE
- 334. MICROPTERA VAR. CRASSINERVIA HERMANN, F.J., RHODORA 70:420. 1968.
 USA: COLORADO: OURAY CO.: ENGINEER PASS (JOHNSON, W.M., 594.
 14 AUG 1967)
 US 2543807 HOLOTYPE
- 335. MILIARIS VAR. AUREA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:37. 1889.

 CANADA: NEW BRUNSWICK: KING'S CO.: KENNEBECASIS RIVER

 (FOWLER, J., ---.)

 GH HOLOTYPE
- 336. MIRABILIS DEWEY, C., AMER. J. SCI. ARTS SER.1, 30:63. 1836.

 USA: MASSACHUSETTS: FRANKLIN CO.: DEERFIELD (DEWEY, C., ---.

 GH HOLOTYPE
- 337. MIRABILIS VAR. PERLONGA FERNALD, M.L., PROC. AMER. ACAD. ARTS
 37:473, PL.2. 1902.
 USA: NEW HAMPSHIRE: HILLSBORD CO.: NEW IPSWICH (FERNALD, M.L.,
 ---. 05 JUN 1896)
 GH SYNTYPE
- 338. MIRABILIS VAR. TINCTA FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:473.

1902.

CANADA: NEW BRUNSWICK: SAINT JOHN RIVER (MACOUN, JOHN, 22. 04 JUL 1899)

GH

SYNTYPE

339. MISANDROIDES FERNALD, M.L., RHODORA 17:158. 1915.

CANADA: NEWFOUNDLAND: PORT AU PORT BAY, TABLE MOUNTAIN

(ST.JOHN, H. AND FERNALD, M.L., 10801. 16-17 JUL 1914)

GH HOLOTYPE NY ISOTYPE

340. MISERA BUCKLEY, S.B., AMER. J. SCI. ARTS SER.1, 45:173. 1843.
USA: NORTH CAROLINA: MITCHELL CO.: ROAN MOUNTAIN (BUCKLEY, S.B.,

NY I SOTYPE

- 341. MISERABILIS MACKENZIE, K.K., N. AMER. FL. 18:385. 1935.

 USA: WASHINGTON: CHELAN CO.: CHIWAUKUM LAKE (EGGLESTON, W.W., 13567. 19-20 AUG 1916)

 US 886422 HOLOTYPE
- 342. MOHRIANA MACKENZIE, K.K., N. AMER. FL. 18:106. 1931.
 USA: FLORIDA: HARDEE CO.: WAUCHULA (CURTISS, A.H., 6761.
 15 APR 1901)
 NY HOLOTYPE

NY HOLOTYPE US 2133195 ISOTYPE

- 343. MOLESTA MACKENZIE,K.K., N. AMER. FL. 18:151. 1931.
 USA: KANSAS: WYANDOTTE CO.: QUINDARO (MACKENZIE,K.K., ---.
 30 MAY 1897)
 NY HOLOTYPE
- 344. MONTANENSIS BAILEY, L.H., BOT. GAZ. 17:152. 1892.
 USA: MONTANA: FLATHEAD CO.: UPPER MARAIS PASS (CANBY, W.M., 350.
 03 AUG 1883)

NY SYNTYPE US 23257 SYNTYPE

- 345. MONTEREYENSIS MACKENZIE, K.K., ERYTHEA 8:92. 1922.
 USA: CALIFORNIA: MONTEREY CO.: PACIFIC GROVE (SMITH, C.P., 1055.
 24 JUL 1905)
 GH HOLOTYPE
- 346. MORRISSEYI PORSILD, A.E., SARGENTIA 4:21. 1943.

 CANADA: NEWFOUNDLAND: LABRADOR, CAPE MUGFORD (PORSILD, A.E.,
 173. 26 AUG 1937)

 US 2095886 ISOTYPE
- 347. MULTICOSTATA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:604. 1916.
 USA: CALIFORNIA: SAN BERNARDINO CO.: SAN BERNARDINO MOUNTAINS,
 BEAR VALLEY DAM (PARISH, S.B., 3609. -- JUN 1895)
 DS 489409 HOLOTYPE

348. MURICULATA HERMANN, F.J. IN MCVAUGH, R., FIELD & LAB. 17:132. 1949.
USA: TEXAS: CULBERSON CO.: GUADALUPE MOUNTAINS, MCKITTRICK
CANYON (MOORE, J.A. AND STEYERMARK, J.A., 3625. 25 JUL 1931)
CAS 194659 ISOTYPE

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NY TYPE MATERIAL US 27280 TYPE MATERIAL

- 350. NEBRASKENSIS DEWEY, C., AMER. J. SCI. ARTS SER.2, 18:102. 1854.
 USA: NEBRASKA: -- (HAYDEN, F.V., ---. ---)
 NY
 ISOTYPE
- 351. NEBRASKENSIS VAR. ERUCAEFORMIS SUKSDORF, W.N., WERDENDA 1:5. 1923. USA: WASHINGTON: KLICKITAT CO.: FALCON VALLEY (SUKSDORF, W.N., 10249. 22 JUN 1919)

DS 171453 ISOTYPE

MO 952735 TYPE COLLECTION

NY ISOTYPE

US 1438017 TYPE COLLECTION

- 352. NEBRASKENSIS VAR. ULTRIFORMIS BAILEY, L.H., BOT. GAZ. 21:8. 1896.
 USA: WASHINGTON: ADAMS CO.: RITZVILLE (SANDBERG, J.H. AND
 LEIBERG, J.B., 194. 09 JUN 1893)
 NY ISOTYPE
- 353. NELSONII MACKENZIE, K.K. IN RYDBERG, P.A., FL. ROCKY MOUNT.
 137, 1060. 1917.
 USA: WYOMING: LA PLATA MINES (NELSON, A. AND NELSON, E., 5264.
 30 AUG 1898)

GH ISOTYPE HOLOTYPE

354. X NEOBIGELOWII LEPAGE, E., NATURALISTE CANAD. 91:166. 1964.

CANADA: QUEBEC: SAGUENAY CO.: ROMAINE RIVER (DUTILLY, A. AND
LEPAGE, E., 41,305A. 12 AUG 1963)

GH ISOTYPE

GH I SOTYPE
NY ISOTYPE
US 2433719 I SOTYPE

- 355. X NEOFILIPENDULA LEPAGE, E., NATURALISTE CANAD. 83:123. 1956.

 CANADA: NEWFOUNDLAND: BONNE BAY, MAIN RIVER, MAIN ARM

 (FERNALD, M.L.; LONG, B. AND FOGG-JR., J.M., 1449. 19 AUG 1929)

 GH HOLOTYPE
- 356. NEOMEXICANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:153. 1907. USA: NEW MEXICO: SANTA RITA DEL COBRA (BIGELOW, J.M., 1547.

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US

TYPE COLLECTION

- 357. X NEOPALEACEA LEPAGE, E., NATURALISTE CANAD. 83:137. 1956.
 CANADA: QUEBEC: PAINT HILLS (DUTILLY, A.; LEPAGE, E. AND DUMAN, M., 32975. 03 SEP 1954)
 GH ISOTYPE
- 358. NERVINA BAILEY, L.H., BOT. GAZ. 10:203. 1885.
 USA: CALIFORNIA: SIERRA NEVADA RANGE, SUMMIT CAMP (KELLOGG, A.,
 ---. 10 JUL 1870)

ISOTYPE

GH HOLOTYPE US 286861 ISOTYPE

2176496

- 359. NEUROPHORA MACKENZIE, K.K. IN ABRAMS, L., ILL. FL. PACIFIC STATES
 1:298, FIG. 706. 1923.
 USA: WASHINGTON: CHELAN CO.: CASCADE MOUNTAINS, STEVENS PASS
 (SANDBERG, J.H. AND LEIBERG, J.B., 773. 18 AUG 1893)
 GH
 ISOTYPE
 NY
 ISOTYPE
- 360. NIGRICANS MEYER, C.A.,

 MEM. ACAD. IMP. SCI. ST.-PETERSBOURG DIVERS SAVANS 1:210, PL.7.

 1831.

 USA: ALASKA: ALEUTIAN ISLANDS, UNALASKA (ISLAND)

 (CHAMISSO, L.A., ---. ---)

 GH ISOTYPE
- 361. NIGRO-MARGINATA SCHWEINITZ, L.D., ANN. LYCEUM NAT. HIST. NEW YORK 1:68. 1824.

 USA: NORTH CAROLINA: FORSYTH CO.: WINSTON-SALEM ("SALEM") (DOS, L., ----)

 NY TYPE COLLECTION
- 362. NOVAE-ANGLIAE SCHWEINITZ, L.D., ANN. LYCEUM NAT. HIST. NEW YORK 1:67. 1824.

 USA: MASSACHUSETTS: BERKSHIRE CO.: WILLIAMSTOWN, SADDLE MOUNTAIN (DEWEY, C., ---. -- 1822)

 GH ISOTYPE
- 363. X NUBENS LEPAGE, E., NATURALISTE CANAD. 84:40. 1957.

 CANADA: QUEBEC: JAMES BAY, EASTMAIN (LEPAGE, E., 33131.

 27 JUL 1955)

 GH ISOTYPE
- 364. NUBICOLA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:480. 1909. USA: COLORADO: MINERAL CO.: PAGOSA PEAK (BAKER, C.F., 232. -- AUG 1899)

 GH ISOTYPE
- 365. NUDATA BOOTT, W. IN WATSON, S., GEOL. SURV. CALIFORNIA, BOT. 2:241.

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USA: CALIFORNIA: MARISS (BOLANDER, H.N., 2299.
-- -- 1860-1867)
MO TYPE MATERIAL
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366. NUDATA VAR. FIRMIOR KUKENTHAL, G. IN ENGLER, H.G.A., PFLANZENR. 4, FAM. 20:337. 1909.

USA: ARIZONA: WILLOW SPRINGS (PALMER, E., 546. -- JUN 1890)
DS ISOTYPE

367. NUTANS VAR. JAPONICA FRANCHET, A. AND SAVATIER, L., ENUM. PL. JAP. 2:154. 1879.

JAPAN: KANAGAWA (PREFECTURE): HONSHU (ISLAND), YOKOSUKA (SAVATIER, L., 1404. -- -- 1866-1874)

US 31277 TYPE MATERIAL

368. NUTTALLII DEWEY, C., AMER. J. SCI. ARTS SER.1, 43:92. 1842.
USA: --: ROCKY MOUNTAINS (NUTTALL, T., 17. ---)
GH HOLOTYPE

I SOTYPE

NY

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369. OAXACANA BAILEY, L.H., BOT. GAZ. 25:271. 1898.

MEXICO: OAXACA: SIERRA DE SAN FELIPE (PRINGLE, C.G., 4842.

29 AUG 1894)

GH ISOTYPE
MO TYPE COLLECTION
US 251772 TYPE COLLECTION
US 817656 TYPE COLLECTION

370. OBISPOENSIS STACEY, J. W., LEAFL. W. BOT. 1:240. 1936.

USA: CALIFORNIA: SAN LUIS OBISPO CO.: SAN LUIS OBISPO, STEINER CREEK (EASTWOOD, A. AND HOWELL, J.T., 2271. 07 MAY 1936)

CAS 235733 HOLOTYPE CAS 237824 ISOTYPE CAS 237908 ISOTYPE DS 270930 ISOTYPE F ISOTYPE 866418 GH **ISOTYPE** NY I SOT YPE 1678188 ISOTYPE US

371. OBLANCEOLATA KOYAMA, T., WILLDENOWIA 5(3):489. 1969.
CHINA: KWANGTUNG: CHUNG TUNG, TAI TSANG, YING TAK (TAK, T.W. AND CHOW, W.K., 3202. 20 NOV 1926)
UC 319673 HOLOTYPE

372. OBOVOIDEA CRONQUIST, A., MADRONO 7:78. 1943.
USA: IDAHO: CUSTER CO.: STANLEY (CRONQUIST, A., 2872.
03 JUL 1941)
GH ISOTYPE

MO 1220830 TYPE MATERIAL

373. OEDERI VAR. ROUSSEAUIANA MARIE-VICTORIN, (FRERE),
PROC. & TRANS. ROY. SOC. CANADA SER.3, 23(2), SECT.5:262.
1929.
CANADA: QUEBEC: MONTMAGNY CO.: L'ESTUAIRE DU ST. LAURENT,

CANADA: QUEBEC: MONTMAGNY CO.: L'ESTUAIRE DU ST. LAURENT, BERTHIER-EN-BAS (ROUSSEAU,J., 24989. 27 JUL 1926) NY TYPE

- 374. OKLAHOMENSIS MACKENZIE, K.K., TORREYA 14:126. 1914.
 USA: OKLAHOMA: CATALE (BUSH, B.F., 993. 22 MAY 1895)

 MO TYPE MATERIAL

 NY TYPE
- 375. OLIGANTHA BOOTT, F., ILL. GENUS CAREX 4:174, PL.589. 1867.

 CHILE: MAGALLANES: TIERRA DEL FUEGO ("FUEGIA"), ORANGE HARBOR

 (WILKES EXPLOR. EXPED., --- 1838-1842)

 US 30695 ISOTYPE
- 376. OLIGOCARPA VAR. LATIFOLIA GRAY, A. EX TORREY, J.,
 ANN. LYCEUM NAT. HIST. NEW YORK 3:415. 1836.
 USA: NEW YORK: JEFFERSON CO.: WATERTOWN (CRAWE, J.B., ---.)
 GH HOLOTYPE
- 377. OLYMPICA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:610. 1916.
 USA: WASHINGTON: CLALLAM CO.: OLYMPIC MOUNTAINS (ELMER, A.D.E.,
 2700. -- JUN 1900)
 NY SYNTYPE
- 378. ONUSTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:618. 1915.

 USA: TEXAS: TARRANT CO.: -- (RUTH, A., 458. 24 APR 1914)

 CAS 351152 ISOTYPE

 NY TYPE

 US 504456 ISOTYPE
- 379. OREGONENSIS OLNEY, S.T. EX BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:73. 1886 ("1887").

 USA: OREGON: -- (HALL, E., 605. -- -- 1871)

 F 455736 SYNTYPE

 NY SYNTYPE
- 380. ORMOSTACHYA WIEGAND, K.M., RHODORA 24:196. 1922.

 USA: NEW HAMPSHIRE: GRAFTON CO.: FRANCONIA, LITTLETON HILL

 (FAXON, E. AND FAXON, C.E., ---. 27 MAY 1896)

 GH HOLOTYPE
- 381. ORONENSIS FERNALD, M.L., PROC. AMER. ACAD. ARTS
 37:471, PL.1, FIG.15,16. 1902.
 USA: MAINE: PENOBSCOT CO.: ORONO (FERNALD, M.L., ---.
 30 JUN 1891)
 GH HOLOTYPE
 NY ISOTYPE

382. OXYCARPA HOLM, H.T., AMER. J. SCI. SER. 4, 20:303. 1905. USA: WASHINGTON: KLICKITAT CO.: COLUMBIA (SUKSDORF, W.N., 816. 02 JUN 1885)

TYPE MATERIAL F 96129 F 211365 TYPE MATERIAL US 27292 TYPE MATERIAL

383. OXYLEPIS VAR. PUBESCENS UNDERWOOD, J.K., AMER. MIDL. NATURALIST 33:635. 1945.

> USA: TENNESSEE: CHEATHAM CO.: PEGRAM (SVENSON.H.K., 10469. 12 JUL 1939)

> > NY TYPE COLLECTION

> > > -p-

384. PACHYCARPA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:616. 1916. USA: CALIFORNIA: ALPINE CO.: SILVER VALLEY, BIG TREE ROAD; ALT. 8000 FT. (BREWER, W.H., 1977. 31 JUL 1863) 1060 HOLOTYPE UC

385. PACHYSTACHYA CHAMISSO, L.A. EX STEUDEL, E.G., SYN. PL. GLUM. 2:197. 1855.

> USA: ALASKA: ALEUTIAN ISLANDS, UNALASKA (ISLAND) (CHAMISSO, L.A., ---. ---) GH ISOTYPE

PACHYSTOMA HOLM, H.T., AMER. J. SCI. SER.4, 20:302. 1905. 386. USA: OREGON: KLAMATH CO.: CRATER LAKE NATIONAL PARK, ANNA CREEK CANYON (COVILLE-F-V-- 1362. 03 SEP 1902) 415172 TYPE US

387. PADDOENSIS SUKSDORF, W.N., ALLG. BOT. Z. SYST. 12:43. 1906. USA: WASHINGTON: YAKIMA CO.: MOUNT ADAMS ("PADDO") (SUKSDORF, W.N., 1296, 13 AUG 1897)

F 223512 TYPE MATERIAL

F 1471489 TYPE MATERIAL

GH ISOTYPE NY ISOTYPE

529528 TYPE MATERIAL US

388. PALAWANENSIS KUKENTHAL, G. IN ELMER, A.D.E., LEAFL. PHILIPP. BOT. 4:1169. 1911.

> PHILIPPINES: PALAWAN: PUERTO PRINCESA, MOUNT PULGAR (ELMER, A.D.E., 13146. -- MAY 1911)

> > GH **I SOTYPE**

NY TYPE MATERIAL US 872800 TYPE MATERIAL

PALLESCENS VAR. NEOGAEA FERNALD, M.L., RHODORA 44:306, PL.712. 389. 1942.

CANADA: NEWFOUNDLAND: GANDER RIVER VALLEY, GLENWOOD

(FERNALD, M.L. AND WIEGAND, K.M., 4918. 12-13 JUL 1911)
GH HOLOTYPE

390. PANSA BAILEY, L.H., BOT. GAZ. 13:82. 1888.

USA: OREGON: CLATSOP CO.: CLATSOP (HENDERSON, L.F., 1482.

31 JUL 1886-20 AUG 1887) DS 490462 SYNTYPE

NY SYNTYPE

391. PAPULOSA BOOTT, F. IN GRAY, A., MEM. AMER. ACAD. ARTS N.S., 6:418.

JAPAN: HOKKAIDO (PREFECTURE): HAKODATE (WRIGHT, C., ---.

-- --- 1853-1856)

GH HOLOTYPE
NY ISOTYPE
US 31344 ISOTYPE

- 392. PARCIFLORA BOOTT, F., MEM. AMER. ACAD. ARTS N.S., 6:418. 1859.

 JAPAN: HOKKAIDO (PREFECTURE): HAKODATE (WRIGHT, C., ---. ---)

 US 27275 TYPE MATERIAL
- 393. PARRYANA DEWEY,C., AMER. J. SCI. ARTS SER.1, 27:239. 1835.

 CANADA: --: HUDSON BAY (RICHARDSON, J., ---.)

 NY

 TYPE COLLECTION
- 394. X PATUENSIS LEPAGE, E., NATURALISTE CANAD. 89:113, FIG.1. 1962.

 CANADA: QUEBEC: UNGAVA BAY, LAKE PATU (DUTILLY, A. AND

 LEPAGE, E., 39329: 19 AUG 1961)

 GH ISOTYPE
- 395. PAUCICOSTATA MACKENZIE, K.K., ERYTHEA 8:74. 1922.

 USA: CALIFORNIA: MARIPOSA CO.: YOSEMITE NATIONAL PARK,

 YOSEMITE VALLEY (BOLANDER, H.N., 6198. -- JUL 1866)

 DS 49738 TYPE COLLECTION

F 309086 TYPE MATERIAL
MO TYPE MATERIAL
NY TYPE COLLECTION

- 396. PAUPERCULA VAR. BREVISQUAMA FERNALD, M.L., RHODORA 20:152. 1918.

 CANADA: QUEBEC: ILE AUX COUDRES (MARÎE-VICTORIN, (FRERE), 4021.

 -- JUN 1917)

 GH HOLOTYPE
- 397. PAUPERCULA VAR. PALLENS FERNALD, M.L., RHODORA 8:77. 1906.
 USA: MAINE: OXFORD CO.: BUCKFIELD (ALLEN, J.A., 21A.
 01 JUL 1878)
 GH HOLOTYPE
- 398. PAYSONIS CLOKEY, I.W., AMER. J. SCI. SER.5, 3:90, PL.2. 1922.
 USA: WYOMING: TETON CO.: GRAND TETON NATIONAL PARK, JACKSON
 HOLE VALLEY (PAYSON, E.B. AND PAYSON, L.B., 2224. 06 AUG 1920)
 GH ISOTYPE
 UC 905434 HOLOTYPE

399. PELOCARPA HERMANN, F.J., RHODORA 39:492. 1937.
USA: UTAH: SUMMIT CO.: LAMOTTE PEAK (HERMANN, F.J., 5983.
15 AUG 1933)
CAS 239452 ISOTYPE
NY HOLOTYPE

400. PERCOSTATA HERMANN, F.J., J. WASH. ACAD. SCI. 40:282. 1950.

MEXICD: CHIHUAHUA: MADERA (MULLER, C.H., 3520. 27 SEP 1939)

CAS 369422 ISOTYPE

US 2133207 TYPE

401. PERGLOBOSA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:606. 1907. USA: COLORADO: SUMMIT CO.: MOUNT BALDY, BRECKENRIDGE (MACKENZIE, K.K., 167. -- AUG 1901)

MO TYPE MATERIAL
NY HOLOTYPE

402. PERILEIA BLAKE, S.T., J. ARNOLD ARBOR. 28:102. 1947.

INDONESIA: WEST NEW GUINEA: LAKE HABBEMA; (COUNTRY AS "DUTCH NEW GUINEA") (BRASS, L.J., 9583. — AUG 1938)

A ISOTYPE

403. PERLONGA FERNALD, M.L., PROC. AMER. ACAD. ARTS 43:61. 1907.
MEXICO: HIDALGO: TRINIDAD IRON WORKS; ALT. 1585 M.
(PRINGLE, C.G., 8863. 02 JUN 1904)

155657 ISOTYPE CAS CAS 193005 **ISOTYPE** F 178542 ISOTYPE GH HOLOTYPE MO **I SOTYPE** NY ISOTYPE 461358 ISOTYPE US

404. PERSTRICTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:479. 1909.
MEXICO: NUEVO LEON: MONTERREY (PRINGLE, C.G., 2630.
05 JUN 1889)

GH I SOTYPE NY TYPE

- 405. PETASATA DEWEY, C., AMER. J. SCI. ARTS SER.1, 29:246. 1836.
 USA: --: ROCKY MOUNTAINS (DRUMMOND, T., ----)
 NY
 TYPE
- 406. PETRICOSA DEWEY, C., AMER. J. SCI. ARTS SER.1, 29:246. 1836.
 USA: --: ROCKY MOUNTAINS (DRUMMOND, T., ---. ---)
 NY
 TYPE
- 407. PETRIEI CHEESEMAN, T.F., TRANS. & PROC. NEW ZEALAND INST. 16:413.
 1884.
 NEW ZEALAND: CANTERBURY (DISTRICT): SOUTH ISLAND, BROKEN RIVER

(CHEESEMAN, T.F., ---. -- JAN 1883)
GH ISOTYPE

408. PHAEOCEPHALA PIPER, C.V., CONTR. U.S. NATL. HERB. 11:172. 1906. USA: OREGON: CLACKAMAS CO.: MOUNT HOOD (HALL, E., 583.

01 AUG 1871)

TYPE COLLECTION F 455706 F 1425899 TYPE COLLECTION GH TYPE COLLECTION MO TYPE COLLECTION NY TYPE COLLECTION

409. PHAEOLEPIS HOLM, H.T., AMER. J. SCI. SER.4, 17:302. 1904. USA: OREGON: CROOK CO .: BEAR BUTTES (LEIBERG, J. B., 335. 26 JUN 1894)

NY **ISOTYPE**

410. PHALAROIDES VAR. PARVULA GROSS, R., REPERT. SP. NOV. REGNI VEG. 50:211. 1941. ARGENTINA: JUJUY: TILCARA DEPT.: TILCARA (VENTURI,S., 6491.

15 FEB 1927)

1545831 TYPE US

411. PHILOCRENA KRECZETOWICZ, V. I.,

> TRUDY SREDNE-AZIATSK. GOSUD. UNIV., SER. 8B, BOT. 17:75. 1934. USSR: TADZHIKISTAN: PAMIRS; ALT. 8200 FT. (LIPSKY, V.I., 2732. 19 JUL 1899)

NY

TYPE MATERIAL

412. PHYLLOMANICA BOOTT, W. IN WATSON, S., GEOL. SURV. CALIFORNIA, BOT. 2:233. 1880.

> USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER, H.N., 4746. -- --- 1866)

> > GH HOLOTYPE MO ISOTYPE NY **ISOTYPE**

413. PHYSOCHLAENA HOLM, H.T., AMER. J. SCI. SER.4, 17:317. 1904. USA: ALASKA: YUKON VALLEY, COAL CREEK HILL (FUNSTON, F., 139. 30 JUL 1893)

> TYPE MATERIAL F 755322 MO 920815 TYPE COLLECTION NY TYPE COLLECTION

PICTA BOOTT, F. IN GRAY, A., MEM. AMER. ACAD. ARTS N.S., 6:418. 414. 1859.

> JAPAN: HOKKAIDO (PREFECTURE): HAKODATE (WRIGHT.C., ---, ---) 31374 TYPE MATERIAL US

415. PICTA STEUDEL, E.G., SYN. PL. GLUM. 2:184. 1855. USA: LOUISIANA: ORLEANS PARISH: NEW ORLEANS (DRUMMOND, T., ---. ---)

TYPE COLLECTION

416. PINETORUM VAR. ELATIOR KUKENTHAL, G. IN ENGLER, H.G.A., PFLANZENR. 4, FAM.20:195. 1909.

MEXICO: DAXACA: SIERRA DE SAN FELIPE; ALT. 10,000 FT. (PRINGLE, C.G., 4685. 08 JUN 1894)

GH ISOTYPE NY ISOTYPE

417. PIPERI MACKENZIE, K.K. IN PIPER, C.V. AND BEATTIE, R.K., FL. NW. COAST 75. 1915.

CANADA: BRITISH COLUMBIA: VANCOUVER ISLAND, CEDAR HILL (MACOUN, JOHN, ---. 31 MAY 1887)

GH ISOTYPE

418. PIRCHINCHENSIS VAR. SIMPLEX GROSS, R., REPERT. SP. NOV. REGNI VEG. 50:211. 1941.

COLOMBIA: --: -- (MUTIS, J.C., KILLIP NO. 5715.

-- --- 1760-1808)

US 1563811 TYPE

419. PITYOPHILA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 40:545. 1913. USA: NEW MEXICO: RIO ARRIBA CO.: TIERRA AMARILLA (EGGLESTON, W.W., 6605. 18 APR-25 MAY 1911)

CAS 383889 ISOTYPE

NY TYPE MATERIAL

US 660821 TYPE

420. PLANATA FRANCHET, A. AND SAVATIER, L., ENUM. PL. JAP. 2:126, 555. 1879.

JAPAN: KANAGAWA (PREFECTURE): HONSHU (ISLAND), YOKOSUKA (SAVATIER, L., 2059. -- -- 1866-1874)

US 27269 TYPE MATERIAL

- 421. PLATYLEPIS MACKENZIE,K.K., N. AMER. FL. 18:142. 1931.

 USA: WYOMING: BIG HORN CO.: BIG HORN MOUNTAINS, TEN SLEEP LAKES

 (WILLIAMS,T.A., 2951. 19 AUG 1897)

 NY HOLOTYPE
- 422. PLATYPHYLLA CAREY, J., AMER. J. SCI. ARTS SER. 2, 4:23. 1847.
 USA: NEW YORK: ("NOV. EBOR.") (CAREY, J., ---. ---)
 GH TYPE MATERIAL
- 423. PLECTOCARPA HERMANN, F.J., LEAFL. W. BOT. 10:66. 1964.

 USA: MONTANA: GLACIER CO.: GLACIER NATIONAL PARK, LOGAN PASS,

 HIDDEN LAKE; ALT. 7300 FT. (HERMANN, F.J., 18120.

 21 AUG 1962)

CAS 416360 ISOTYPE US 2420276 HOLOTYPE

- 424. PLUVICA VAR. KOOLAUENSIS KRAUSS,R., PACIFIC SCI. 4:274. 1950.
 USA: HAWAII: HONOLULU CO.: OAHU (ISLAND), KOOLAU MOUNTAINS
 (HOSAKA,E.Y., 594. 04 JUL 1932)
 US 2074725 TYPE MATERIAL
- 425. PODOCARPA BROWN, R. IN RICHARDSON, J. IN FRANKLIN, J.,

NARR. JOURNEY POLAR SEA 751. 1819.
CANADA: --: -- (RICHARDSON, J., ---. ---)
GH TYPE MATERIAL

426. PODOGYNA FRANCHET,A. AND SAVATIER,L., ENUM. PL. JAP. 2:131, 557. 1879.

JAPAN: TOKYO (PREFECTURE): TOKYO (SAVATIER, L., 1413.
-- -- 1866-1874)
US 27270 TYPE MATERIAL

- 427. PORTERI OLNEY, S.T., CARIC. BOR.-AMER. 12. 1871.

 USA: MAINE: PISCATAQUIS CO.: MOUNT KINEO, MOOSEHEAD LAKE

 (PORTER, T.C., ---. 28 AUG 1871)

 GH HOLOTYPE
- 428. POTOSINA HEMSLEY, W.B., BIOL. CENTR.-AMER. 3:474. 1885.

 MEXICO: SAN LUIS POTOSI: SAN LUIS POTOSI (SCHAFFNER, J.G., 546.

 ----- 1877)

 GH ISOTYPE
- 429. PRAECEPTORIUM MACKENZIE, K.K., N. AMER. FL. 18:95. 1931.

 USA: WASHINGTON: KLICKITAT CO.: SIMCOE MOUNTAINS, GOLDENDALE

 (PECK, M.E., 13. 13 AUG 1917)

 NY HOLOTYPE
- 431. PRAINII CLARKE, C.B., J. LINN. SOC., BOT. 36:305. 1904.
 CHINA: YUNNAN: RED RIVER (HENRY, A., 10839. ---)
 MO TYPE MATERIAL
 US 458108 TYPE MATERIAL
- 432. PRAIREA DEWEY, C. IN WOOD, A., CLASS-BOOK BOT. 414. 1845.

 USA: MICHIGAN: -- (---, ---)

 GH HOLOTYPE
- 433. PRATENSIS DREJER, S.T.N., NATURHIST. TIDSSKR. 3:442. 1841.

 GREENLAND: --: -- (VAHL, J., ---.)

 CAS 105004 TYPE COLLECTION
- 434. PRATENSIS VAR. FURVA BAILEY, L.H. IN MACOUN, JOHN, CAT. CANADIAN PL. 5:377. 1890.

 CANADA: BRITISH COLUMBIA: VANCOUVER ISLAND, CEDAR HILL

 (MACOUN, JOHN, ---. 31 MAY 1887)

 GH ISOTYPE
- 435. PRATICOLA VAR. SUBCORIACEA HERMANN, F.J., LEAFL. W. BOT. 8:113. 1957.

 CANADA: ALBERTA: MOUNTAIN PARK, MCCLEOD RIVER (HERMANN, F.J., 13453. 26 AUG 1956)

CAS 404488 ISOTYPE US 2265957 HOLOTYPE

436. PREISSII ESSENBACH, N. VON IN LEHMANN, J., PL. PREISS. 2:94. 1846.

AUSTRALIA: --: -- (PREISS, L., 1825. ---)

GH SYNTYPE

AUSTRALIA: WESTERN AUSTRALIA: PERTH (PREISS, L., 1861. -- JUL 1839)

MO 2002968 SYNTYPE

US

- 437. PRESLII STEUDEL, E.G., SYN. PL. GLUM. 2:242. 1855.

 USA: ALASKA: NUTKA SOUND ("SINUS NUTKA") (HAENKE, T., ---.)

 US 865056 TYPE MATERIAL
- 438. PRINGLEI BAILEY, L.H., BOT. GAZ. 17:151. 1892.

 MEXICO: SAN LUIS POTOSI: HACIENDA DE ANGUSTURA, 100 MILES EAST

 OF SAN LUIS POTOSI (PRINGLE, C.G., 3801. 04 AUG 1891)

 F 105551 TYPE COLLECTION

 F 1607711 TYPE COLLECTION

 GH TYPE COLLECTION

 MO TYPE COLLECTION

 NY TYPE COLLECTION
- 439. PRIONPHYLLA HOLM, H.T., AMER. J. SCI. SER. 4, 14:423. 1902.

 USA: IDAHO: DIVIDE BETWEEN SAINT JOE AND CLEARWATER RIVERS

 (LEIBERG, J.B., 125. 10 JUL 1895)

 NY TYPE COLLECTION

817724 TYPE COLLECTION

440. PROJECTA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 35:264. 1908.

CANADA: NEW BRUNSWICK: KENT CO.: KOUCHIBOUGUAC (FOWLER, J., ---.
1872)

GH ISOTYPE
NY TYPE COLLECTION

- 441. PROPOSITA MACKENZIE,K.K., N. AMER. FL. 18:126. 1931.
 USA: IDAHO: BLAINE CO.: SMOKY MOUNTAINS; ALT. 2700 M.
 (MACBRIDE, J.F. AND PAYSON, E.B., 3778. 13 AUG 1916)
 CAS 102638 ISOTYPE
 GH ISOTYPE
 NY HOLOTYPE
- 442. X PSEUDO-FULVA FERNALD, M.L., RHODORA 35:231. 1933.

 CANADA: NEWFOUNDLAND: PORT AU PORT BAY, TABLE MOUNTAIN

 (FERNALD, M.L. AND WIEGAND, K.M., 4258. 16 AUG 1910)

 GH HOLOTYPE
- 443. PSEUDOJAPONICA CLARKE, C.B., BULL. MISC. INFORM. ADD. SER. 8:81.
 1908.
 USA: CALIFORNIA: NEVADA CO.: SIERRA NEVADA RANGE, DONNER LAKE;
 ALT. 2750 M. (HELLER, A.A., 7187. 17 AUG 1903)
 F 215918 TYPE COLLECTION

NY TYPE COLLECTION

- 444. PTEROLEPTA FRANCHET,A., NOUV. ARCH. MUS. HIST. NAT. SER.3, 8:215.
 1896.
 CHINA: YUNNAN: -- (DELAVAY,R.P., 4829. 15 JUL 1889)
 US 1123683 ISOTYPE
- 446. PURPUREOVAGINATA VAR. ITATIAIAE GROSS,R.,
 REPERT. SP. NOV. REGNI VEG. 50:212. 1941.
 BRAZIL: RIO DE JANEIRO: ITATIAIA (CHASE,A., 8283. 17 JAN 1925)
 US 1282178 TYPE
- 447. PURPURIFERA MACKENZIE, K.K., N. AMER. FL. 18:253. 1935.
 USA: TENNESSEE: CAMPBELL CO.: CHASKA (BRIGHT, J., ---.
 18 MAY 1923)
 NY TYPE COLLECTION
- 448. PYCNOTHYSOS KUKENTHAL,G., PHILIPP. J. SCI. 6:60. 1911.
 PHILIPPINES: NEGROS OCCIDENTAL: MOUNT CANLAON (VOLCANO)

 (MERRILL,E.D., 543. -- APR 1910)

 US 1398830 TYPE MATERIAL

-0-

- 449. QUADRIFIDA BAILEY, L.H., PROC. CALIF. ACAD. SCI. SER.2, 3:104.
 1891.
 USA: CALIFORNIA: TUOLUMNE CO.: MOUNT DANA, TUOLUMNE RIVER
 (BOLANDER, H.N., 5046. -- --- 1866)
 DS 55002 SYNTYPE
 NY SYNTYPE
- 450. QUADRIFIDA VAR. LENIS BAILEY, L.H., PROC. CALIF. ACAD. SCI.

 SER. 2, 3:105. 1891.

 USA: CALIFORNIA: TUOLUMNE CO.: MOUNT DANA, TUOLUMNE RIVER

 (BOLANDER, H.N., 5046. -- -- 1866)

 NY SYNTYPE
- 451. X QUEBECENSIS LEPAGE, NATURALISTE CANAD. 91:168. 1964.

 CANADA: QUEBEC: SAGUENAY CO.: ROMAINE RIVER (DUTILLY, A. AND LEPAGE, E., 41,305. 12 AUG 1963)

 GH ISOTYPE

 NY ISOTYPE

 US 2433718 ISOTYPE
- 452. QUICHENSIS HERMANN, F.J., J. WASH. ACAD. SCI. 40:284. 1950.

 GUATEMALA: QUICHE: NEBAJ (SHARP, A.J., 45144. 07 FEB 1945)

 US 2133193 TYPE

453. RACHILLIS MAGUIRE, B., BRITTONIA 5:199. 1944.
USA: UTAH: GILBERT PEAK (MAGUIRE, B. AND MAGUIRE, R.R., 14668.
16 AUG 1936)

CAS 325253 ISOTYPE NY TYPE

US 1872576 TYPE MATERIAL

- 454. RAMOSII KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 8:8. 1910.
 PHILIPPINES: RIZAL: LUZON (ISLAND), MORONG (RAMOS,M.,
 BUR. SCI. 1434. -- AUG 1906)
 US 626608 TYPE MATERIAL
- 455. RAYNOLDSII DEWEY, C., AMER. J. SCI. ARTS SER.2, 32:39. 1861.

 USA: IDAHO: FREMONT CO.: PIERRE'S HOLE AND HENRY'S FORK

 (HAYDEN, F.V., ---. 20 JUN 1860)

 GH SYNTYPE
- 456. RETROCURVA DEWEY, C. IN WOOD, A., CLASS-BOOK BOT. 423. 1845.
 USA: NEW YORK: JEFFERSON CO.: -- (WOOD, W.A., ---. ---)
 GH HOLOTYPE
- 457. RETROCURVA VAR. COPULATA BAILEY, L. H., HERB. DISTR. NO.161. 1886.
 USA: MICHIGAN: INGHAM CO.: LANSING (BAILEY, L. H., 161.
 01 JUN 1886)
 GH ISOTYPE
- 458. RETROFLEXA MUHLENBERG, H. EX WILLDENOW, C.L., SP. PL. ED.4, 4:235.

 1805.

 USA: TEXAS: -- (DRUMMOND, T., ---.)

 NY

 TYPE
- 459. RHYNCHACHAENIUM CLARKE, C.B. IN MERRILL, E.D.,
 PUBL. BUR. SCI. GOV. LAB. 35:5. 1906 ("1905").
 PHILIPPINES: BATAAN: MOUNT MARIVELES; ALT. 1100 M.
 (ELMER, A.D.E., 6983. -- NOV 1904)
 NY COTYPE
- 460. RICHARDSONII BROWN, R. IN RICHARDSON, J. IN FRANKLIN, J.,
 NARR. JOURNEY POLAR SEA 751. 1819.
 CANADA: --: -- (RICHARDSON, J., ----)
 GH TYPE MATERIAL
- 461. RICHARDSONII FOR. EXSERTA FERNALD, M.L., RHODORA 44:290. 1942.
 USA: ILLINOIS: HANCOCK CO.: AUGUSTA (MEAD, S.B., ---.)
 GH HOLOTYPE
- 462. ROANENSIS HERMANN, F.J., CASTANEA 12:113. 1948 ("1947").

 USA: TENNESSEE: CARTER CO.: ROAN MOUNTAIN; ALT. 4700 FT.

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(BROWN, D.M., 255. 02 AUG 1936)
   US
         2133190 HOLOTYPE
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463. RORAIMENSIS STEYERMARK, J. A., FIELDIANA, BOT. 28:67, FIG. 7. 1951. VENEZUELA: BOLIVAR: MOUNT RORAIMA; ALT. 2700-2740 M. (STEYERMARK, J.A., 58870. 28 SEP 1944)

1263854 HOLOTYPE NY **ISOTYPE**

ROSAEOIDES HOWE, E.C. IN GORDINIER, H.C. AND HOWE, E.C., 464.

FL. RENSSELAER CO. 33. 1894.

USA: NEW YORK: RENSSELAER CO.: LANSINGBURGH (HOWE, E.C., ---. 30 MAY 1887)

NY

ISOTYPE

465. ROSEA VAR. ARKANSANA BAILEY, L.H., BOT. GAZ. 13:87. 1888.

USA: ARKANSAS: PULASKI CO.: LITTLE ROCK, LA FOURCHE CREEK

(HASSE, H.E., --- 01 MAY 1886)

GH HOLOTYPE NY **ISOTYPE**

ROSEA VAR. PUSILLA PECK, C.H., ANNUAL REP. NEW YORK STATE MUS. 466.

48:132. 1895.

USA: NEW YORK: LIVINGSTONE CO.: PORTAGE (PECK, C.H., ---.

-- JUN 1894)

NY TYPE

467. ROSEA VAR. STAMINATA PECK, C.H., ANNUAL REP. NEW YORK STATE MUS. 47:164. 1894.

USA: NEW YORK: OTSEGO CO.: COOPERSTOWN JUNCTION (PECK, C.H., 5.

-- JUN 1893)

NY TYPE

468. RUBRO-BRUNNEA VAR. ELINEOLATA MERRILL.E.D., LINGNAN SCI. J. 13:18. 1934.

CHINA: KWANGTUNG: LOH-FAU-SHAN (MOUNTAIN), POK-LO (TSUI, T. M., 74. -- MAR-APR 1932)

Δ **ISOTYPE** GH ISOTYPE MO 1260436 ISOTYPE NY TYPE

US 1754487 **I SOTYPE**

469. RUGATA FERNALD, M.L., RHODORA 43:545, PL.671. 1941.

USA: VIRGINIA: SUSSEX CO.: HOMEVILLE (FERNALD, M.L. AND LONG, B.,

07 MAY 1940) 11787.

> CAS 336836 ISOTYPE F 1489429 ISOTYPE GH HOLOTYPE MO 1306478 ISOTYPE **ISOTYPE** NY US 2003132 ISOTYPE

- 470. RUGATA OHWI, J., ACTA PHYTOTAX. GEOBOT. 1:76. 1932.

 JAPAN: --: HONSHU (ISLAND), MOUNT DAIMONJI IN YAMASHIRO

 (OHWI, J., 29. 04 MAY 1931)

 F 1463953 TYPE MATERIAL
- 471. RUGOSPERMA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:621. 1915.
 USA: NEW JERSEY: OCEAN CO.: TUCKERTON (MACKENZIE, K.K., 9871.
 -- MAY 1911)
 NY TYPE
- 472. RUSBYI MACKENZIE, K.K., SMITHSONIAN MISC. COLLECT. 65(7):2. 1915.
 USA: ARIZONA: YAVAPAI CO.: -- (RUSBY, H.H., 859. -- -- 1883)

 NY
 TYPE
 US
 30267 TYPE COLLECTION
- 473. RUTHII MACKENZIE, K.K., N. AMER. FL. 18:112. 1931.

 USA: NORTH CAROLINA: BUNCOMBE CO.: CRAGGY MOUNTAIN (RUTH, A.,

 ---- -- JUL 1900)

 NY HOLOTYPE

-5-

474. SALINAEFORMIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:477. 1909. USA: CALIFORNIA: MENDOCINO CO.: MENDOCINO CITY (BOLANDER, H.N., 4702. -- --- 1866)

CAS 383801 TYPE COLLECTION DS 293480 TYPE COLLECTION F 30885 TYPE MATERIAL MO TYPE MATERIAL NY TYPE COLLECTION US 29888 TYPE COLLECTION US 319226 TYPE COLLECTION

- 475. SALTAENSIS GROSS,R., REPERT. SP. NOV. REGNI VEG. 50:211. 1941.
 ARGENTINA: SALTA: ROSARIO DEPT.: CAMPO QUIJANO (VENTURI,S.,
 8650. -- --- 1929)
 US 1545752 TYPE
- 476. SANGUINEA BOOTT, F., TRANS. LINN. SOC. LONDON 20:137. 1846.

 AFGHANISTAN: --: -- (GRIFFITH, W., 96(KEW 6094). ---)

 NY

 TYPE COLLECTION
- 477. SARAWAKETENSIS KUKENTHAL,G., BOT. JAHRB. SYST. 69:262. 1938.

 PAPUA AND NEW GUINEA: NORTH-EAST NEW GUINEA (TERRITORY):

 MOROBE DISTRICT: FINISTERRE RANGE, MOUNT SARAWAKET

 (CLEMENS,J. AND CLEMENS,M.S., 5546. -- MAR 1937)

 A ISOTYPE
- 478. SARTWELLIANA OLNEY,S.T. IN GRAY,A., PROC. AMER. ACAD. ARTS 7:396.
 1868.
 USA: CALIFORNIA: MARIPOSA CO.: YOSEMITE NATIONAL PARK.

YOSEMITE VALLEY (BREWER, W. H., 1636. -- -- 1863)
GH HOLOTYPE

- 479. SARTWELLII DEWEY,C., AMER. J. SCI. ARTS SER.1, 43:90. 1842.

 USA: NEW YORK: SENECA CO.: JUNIUS (SARTWELL,H.P., 12. ---)

 CAS 383407 TYPE COLLECTION

 CAS 553975 TYPE COLLECTION

 NY TYPE COLLECTION
- 480. SAVAIIENSIS KUKENTHAL,G., BERNICE P. BISHOP MUS. BULL. 128:24.
 1935.
 WESTERN SAMOA: --: SAVAII ISLAND (CHRISTOPHERSEN, E., 800.
 24 SEP 1929)
 NY ISOTYPE
- 481. X SAXENII NM. FERRUGINEA LEPAGE, E., NATURALISTE CANAD. 83:142.
 1956.
 CANADA: QUEBEC: JAMES BAY, FORT GEORGE (DUTILLY, A.; LEPAGE, E.
 AND DUMAN, M., 32357. 14 AUG 1954)
 GH ISOTYPE
 US 2176493 ISOTYPE
- 482. SAXIMONTANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 33:439. 1906.
 USA: COLORADO: LARIMER CO.: FORT COLLINS (BAKER, C.F., ---.

MO TYPE MATERIAL NY TYPE MATERIAL

- 483. SCABRIOR SARTWELL, H.P. EX DEWEY, C., AMER. J. SCI. ARTS
 SER.2, 8:349. 1849.
 USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., 72. ---)
 CAS 553877 ISOTYPE
- 484. SCABRIUSCULA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 35:268. 1908. USA: WASHINGTON: CASCADE MOUNTAINS (CUSICK, W.C., 2849. 30 JUN 1902)

DS 490735 ISOTYPE
MO ISOTYPE
NY TYPE
US 528631 ISOTYPE

- 487. SCHNEIDERI NELMES, E., BULL. MISC. INFORM. 201. 1939.

- CHINA: YUNNAN: LIKIANG (SCHNEIDER, C., 2738. 06 AUG 1914)
 GH HOLOTYPE
- 488. SCHWEINITZII DEWEY, C., AMER. J. SCI. ARTS SER.1, 9:68. 1825.
 USA: MASSACHUSETTS: BERKSHIRE CO.: WILLIAMSTOWN (DEWEY, C., ---.

GH HOLOTYPE

- 489. SCIRPIFORMIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 35:270. 1908.

 CANADA: ALBERTA: BANFF NATIONAL PARK, BANFF (MCCALLA, W.C.,
 2348. 28 JUL 1899)

 NY TYPE
- 490. SCIRPOIDEA VAR. GIGAS HOLM, H.T., AMER. J. SCI. SER.4, 18:20. 1904. USA: CALIFORNIA: SISKIYOU CO.: MOUNT EDDY (PRINGLE, C.G., ---. 19 AUG 1881)

 F 210109 TYPE COLLECTION

F 210109 TYPE COLLECTION NY TYPE COLLECTION

- 491. SCIRPOIDEA VAR. STENOCHLAENA HOLM, H.T., AMER. J. SCI. SER.4, 18:20.
 1904.
 CANADA: BRITISH COLUMBIA: CHILLIWACK VALLEY (MACOUN, J.M.,
 33728. 12 JUL 1901)
 NY TYPE COLLECTION
- 492. SCOPARIA VAR. CONDENSA FERNALD, M.L., PROC. AMER. ACAD. ARTS
 37:468, PL.1. 1902.
 USA: MASSACHUSETTS: MIDDLESEX CO.: MEDFORD (BOOTT, W., ---.
 26 JUL 1865)
 GH HOLOTYPE
- 493. SCOPARIA VAR. FULVA BOOTT, W. IN WATSON, S.,
 GEOL. SURV. CALIFORNIA, BOT. 2:237. 1880.
 USA: CALIFORNIA: ALPINE CO.: SILVER VALLEY (BREWER, W.H., 1969.
 31 JUL 1863)
 GH SYNTYPE
- 494. SCOPARIA VAR. MINOR BOOTT, F., ILL. GENUS CAREX 3:116, PL.369.

 1862.

 USA: NEW HAMPSHIRE: WHITE MOUNTAINS (TUCKERMAN, E., ----)

 NY TYPE COLLECTION
- 496. SCOPARIA FOR. PERACUTA FERNALD, M.L., RHODORA 23:234. 1921.

 CANADA: NOVA SCOTIA: YARMOUTH CO.: SAND BEACH (FERNALD, M.L.

 AND LONG, B., 20296. 14 JUL 1920)

 GH HOLOTYPE
- 497. SCOPARIA VAR. SUBTURBINATA FERNALD, M.L. AND WIEGAND, K.M., RHODORA

14:116. 1912.

CANADA: NEWFOUNDLAND: EXPLOITS RIVER VALLEY, GRAND FALLS AREA, RUSHY POND (FERNALD, M.L. AND WIEGAND, K.M., 4796.

28 AUG 1911)

F 464432 SYNTYPE
GH HOLOTYPE
NY ISOTYPE

498. SCOPARIA VAR. TESSELLATA FERNALD, M.L. AND WIEGAND, K.M., RHODORA
12:135. 1910.

USA: MAINE: WASHINGTON CO.: PEMBROKE (FERNALD, M.L., 1464.

C8 JUL 1909)

GH HOLOTYPE NY ISOTYPE

499. SCOULERI TORREY, J., ANN. LYCEUM NAT. HIST. NEW YORK 3:399. 1836.
USA: BRITISH COLUMBIA: "WESTERN SHORE OF AMERICA, OBSERVATORY
INLET" (ARM OF PORTLAND INLET) (SCOULER, J., 296. ---)
NY HOLOTYPE

500. SEATONIANA BAILEY, L. H., BOT. GAZ. 25:270. 1898.

MEXICO: HIDALGO: TULA (PRINGLE, C.G., 7452. 24 JUN 1897)

CAS 445940 ISOTYPE GH ISOTYPE

US 305734 TYPE COLLECTION

501. SHELDONII MACKENZIE, K.K., BULL. TORREY BOT. CLUB 42:618. 1915. USA: OREGON: UNION CO.: CLARK'S CREEK (SHELDON, E.P., 8854.

09 SEP 1897)

NY ISOTYPE NY TYPE

US 528495 TYPE COLLECTION

502. SICCATA DEWEY, C., AMER. J. SCI. ARTS SER.1, 10:278. 1826.
USA: MASSACHUSETTS: HAMPDEN CO.: WESTFIELD (DAVIS, E., ---.

NY

Y TYPE COLLECTION

503. SIMULATA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:604. 1907. USA: WYOMING: ALBANY CO.: CHUG CREEK (NELSON, A., 7316. 29 JUN 1900)

NY HOLOTYPE

504. SMALLIANA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 36:484. 1909.
USA: GEORGIA: TATTNALL CO.: REIDSVILLE (HARPER, R.M., 2159.
26 APR 1904)

US 511177 TYPE COLLECTION

505. SONOMENSIS STACEY, J.W., LEAFL. W. BOT. 2:63. 1937.
USA: CALIFORNIA: SONOMA CO.: SEBASTOPOL, PITKIN MARSH
(HOWELL, J.T. AND STACEY, J.W., 13042. 06 JUN 1937)

CAS 246086 HOLOTYPE CAS 246636 ISOTYPE

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DS
       258275
               ISOTYPE
DS
       374718
               ISOTYPE
F
       907841
                ISOTYPE
GH
                ISOTYPE
NY
                ISOTYPE
UC
       835699
                ISOTYPE
US
      1736782
                ISOTYPE
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- 506. SOPERI RAUP, H.M., SARGENTIA 6:129, FIG.12. 1947.

 CANADA: NORTHWEST TERRITORIES: MACKENZIE DISTRICT: BRINTELL

 LAKE (RAUP, H.M. AND SOPER, J.H., 9534. 18 JUL 1939)

 GH HOLOTYPE
- 507. SPECIFICA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:21. 1889.
 USA: CALIFORNIA: ALPINE CO.: SILVER VALLEY (BREWER, W.H., 1969.
 31 JUL 1863)
 CAS 232289 SYNTYPE
- 508. SPECUICOLA HOWELL, J.T., LEAFL. W. BOT. 5:148. 1949.
 USA: ARIZONA: COCONINO CO.: INSCRIPTION HOUSE (HOWELL, J.T., 24609. 23 JUN 1948)

30329 SYNTYPE

CAS 342552 ISOTYPE CAS 342553 HOLOTYPE DS 337970 ISOTYPE GH **ISOTYPE** NY ISOTYPE US 2006386 ISOTYPE

US

- 509. SPRETA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:6. 1889.

 USA: OREGON: MULTNOMAH CO.: SAUVIE ISLAND (COLUMBIA RIVER AT MOUTH OF WILLAMETTE RIVER) (HOWELL, T.J., ---. -- MAY 1880)

 GH TYPE COLLECTION

 MO TYPE COLLECTION
- 510. STANDLEYANA STEYERMARK, J.A., CEIBA 3:23. 1952.

 GUATEMALA: JALAPA: AGUACATE (WILLIAMS, L.O., 13178.

 06 JUL 1947)

 F 1252385 HOLOTYPE
- 511. STANTONENSIS JONES, M.E., BULL. MONTANA STATE UNIV., BIOL. SER.
 15:2C, PL.3. 1910.
 USA: MONTANA: STANTON LAKE (WILLIAMS, R.S., ---. 11 AUG 1894)
 NY TYPE
- 512. STELLATA MACKENZIE, K.K., N. AMER. FL. 18:226. 1935.

 MEXICO: HIDALGO: IXMIQUILPAN (ROSE, J.N.; PAINTER, J.H. AND ROSE, J.S., 9019. -- -- 1905)

 NY ISOTYPE

 US 452499 HOLOTYPE
- 513. STELLULATA VAR. CONFERTA CHAPMAN, A.W., FL. S. U.S. ED.1, 534.

- USA: FLORIDA: GADSDEN CO.: -- (CHAPMAN, A.W., ---. ---)
 NY
 TYPE
- 514. STENOPHYLLA VAR. DESERTORUM LITVINOV, D.I., ALLG. BOT. Z. SYST. 5(BEIH.1):56. 1899.

 USSR: TURKESTAN: -- (LITVINOV, D.I., 153. -- -- 1897)

 US 616142 TYPE MATERIAL
- 515. STENOPTERA MACKENZIE, K.K., ERYTHEA 8:28. 1922.

 USA: CALIFORNIA: LOS ANGELES CO.: SAN ANTONIO MOUNTAINS, ICE

 HOUSE CANYON (JOHNSTON, I.M., 1505. 31 JUL 1917)

 DS 83850 ISOTYPE

 NY TYPE
- 516. STERILIS VAR. EXCELSIOR BAILEY, L.H., BULL. TORREY BOT. CLUB 20:424.
 1893.
 USA: NEW YORK: SENECA CO.: JUNIUS (SARTWELL, H.P., 35. ---)
 NY ISOTYPE
- 517. STEUDELII KUNTH, C.S., ENUM. PL. 2:480. 1837.

 USA: OHIO: MIAMI RIVER VALLEY (FRANK, J.C., ---. 1835)

 NY TYPE COLLECTION
- 518. STEYERMARKII STANDLEY, P.C., PUBL. FIELD MUS. NAT. HIST., BOT. SER. 23:196. 1947.

 GUATEMALA: HUEHUETENANGO: CERRO HUITZ (STEYERMARK, J.A., 48542. 14 JUL 1942)

 F 1129C96 HOLOTYPE
- 519. STIPATA VAR. LAEVIVAGINATA KUKENTHAL,G. IN ENGLER,H.G.A.,
 PFLANZENR. 4, FAM.20:172. 1909.
 USA: NORTH CAROLINA: BUNCOMBE CO.: BILTMORE (NEAR ASHEVILLE)
 (BILTMORE HERBARIUM, 262A. 28 MAY 1897)

 F 813737 TYPE COLLECTION
 GH TYPE COLLECTION
 MO TYPE COLLECTION
 NY TYPE COLLECTION
- 520. STIPATA VAR. MAXIMA CHAPMAN, A.W. EX BOOTT, F., ILL. GENUS CAREX 3:121, PL.391. 1862.
 USA: FLORIDA: APPALACHICOLA (CHAPMAN, A.W., ---. ---)
 US 969091 TYPE COLLECTION
- 521. STIPATA VAR. SUBSECUTA PECK, C.H., ANNUAL REP. NEW YORK STATE MUS.
 48:128. 1895.
 USA: NEW YORK: RENSSELAER CO.: BERLIN (PECK, C.H., ---.
 -- JUN 1894)
 NY TYPE COLLECTION
- 522. STIPATA VAR. UBERIOR MOHR,C., CONTR. U.S. NATL. HERB. 6:417. 1910.
 USA: ALABAMA: MOBILE RIVER (MOHR,C., ---. 26 APR 1897)
 NY ISOTYPE

STRAMINEA VAR. CUMULATA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:23. 523. 1889.

CANADA: NEW BRUNSWICK: KENT CO.: -- (FOWLER, J., +--.

-- JUL 1870)

GH SYNTYPE MO SYNTYPE NY SYNTYPE

524. STRAMINEA VAR. ECHINODES FERNALD, M.L., PROC. AMER. ACAD. ARTS 37:474, PL.2. 1902.

CANADA: ONTARIO: LAMBTON CO.: WYOMING (MACOUN, JOHN, 26624.

24 JUN 1901)

GH SYNTYPE

525. STRAMINEA VAR. RENIFORMIS BAILEY, L. H., MEM. TORREY BOT. CLUB 1:73. 1889.

USA: MISSISSIPPI: OKTIBBEHA CO.: STARKVILLE (TRACY.S.M.. 17.

23 MAY 1888)

SYNTYPE NY

526. STRICTA VAR. XEROCARPA BRITTON, N.L., BULL. TORREY BOT. CLUB 22:222. 1895.

USA: NEW YORK: STEUBEN CO.: PRATTSBURGH (WRIGHT, S.H., ---.

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TYPE COLLECTION NY

STYLOFLEXA BUCKLEY, S.B., AMER. J. SCI. ARTS SER.1, 45:174. 1843. 527. USA: NORTH CAROLINA: MACON CO.: MOUNTAINS (BUCKLEY, S.B., ---. ---}

TYPE COLLECTION MO NY TYPE COLLECTION

528. STYLOSA VAR. VIRENS BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:79.

1886 ("1887").

USA: OREGON: MULTNOMAH CO.: SAUVIE ISLAND (COLUMBIA RIVER AT MOUTH OF WILLAMETTE RIVER) (HOWELL, T.J., --- -- MAY 1880)

GH SYNTYPE

MO SYNTYPE

SUB-BRACTEATA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:612. 1916. 529. USA: CALIFORNIA: ALAMEDA CO.: OAKLAND (BOLANDER, H.N., ---.

-- --- 1860 CA.)

GH **ISOTYPE** NY HOLOTYPE US 28683 ISOTYPE

530. SUBFUSCA BOOTT, W. IN WATSON, S., GEOL. SURV. CALIFORNIA, BOT. 2:234. 1880.

> USA: CALIFORNIA: LAKE TAHOE TO BEAR VALLEY (KELLOGG, A., ---. ---}

ISOTYPE GH

531. SUBIMPRESSA CLOKEY, I.W., RHODORA 21:84. 1919.

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USA: ILLINDIS: MACON CO.: -- (CLOKEY, I.W., 2338. 06 AUG 1915)

CAS 162423 ISOTYPE

UC 905433 HOLOTYPE
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- 532. SUBNIGRICANS STACEY, J.W., LEAFL. W. BOT. 2:167. 1939.

 USA: CALIFORNIA: TUOLUMNE CO.: MOUNT DANA (HOWELL, J.T., 14519.

 11 AUG 1938)

 CAS 259816 HOLOTYPE

 US 1765699 ISOTYPE
- 533. SUBORBICULATA MACKENZIE, K.K. IN ABRAMS, L., ILL. FL. PACIFIC STATES
 1:338. 1923.
 USA: WASHINGTON: KLICKITAT CO.: -- (SUKSDORF, W.N., 1315.
 -- JUL 1883)
 NY TYPE
- 534. SUBTRANSVERSA CLARKE, C.B., PHILIPP. J. SCI. 2:108. 1907.

 PHILIPPINES: BENGUET: LUZON (ISLAND), PAUAI (MERRILL, E.D.,

 473C. -- OCT-NOV 1905)

 NY TYPE MATERIAL

 US 710428 TYPE MATERIAL
- 535. SUKSDORFII KUKENTHAL,G., REPERT. SP. NOV. REGNI VEG. 16:434. 1920.
 USA: WASHINGTON: YAKIMA CO.: MOUNT ADAMS ("PAÓDO")

 (SUKSDORF,W.N., 7383. 27 AUG 1912)

 CAS 152864 ISOTYPE

CAS 152864 ISOTYPE CAS 243333 ISOTYPE DS 171455 ISOTYPE DS 269641 ISOTYPE GH ISOTYPE MO 95212 TYPE COLLECTION NY I SOTYPE US 1437926 TYPE COLLECTION

536. SUKSDORFII VAR. OVALIS KUKENTHAL, G., REPERT. SP. NOV. REGNI VEG. 16:434. 1920.
USA: WASHINGTON: YAKIMA CO.: MOUNT ADAMS ("PADDO")
(SUKSDORF, W.N., 5259. 21 AUG-20 SEP 1905)

DS 269625 SYNTYPE
NY SYNTYPE

- 537. SURCULOSA RAYMOND, M., MEM. JARD. BOT. MONTREAL 52:22. 1959.
 CHINA: KWANGTUNG: SIN-FUNG DISTRICT: SAI-LIN-SHAN VILLAGE,
 NGOK SHING SHAN (TAAM, Y.W., 502. 1-16 APR 1938)
 A HOLOTYPE
- 538. SYCHNOCEPHALA CAREY, J., AMER. J. SCI. ARTS SER. 2, 4:24. 1847.

 USA: NEW YORK: JEFFERSON CO.: WATERTOWN (CAREY, J., ---. ---)

 GH ISOTYPE

539. TACHIRENSIS STEYERMARK, J.A., FIELDIANA, BOT. 28:68, FIG.8. 1951. VENEZUELA: TACHIRA: COLOMBIAN-VENEZUELAN BOUNDARY, PARAMO DE TAMA; ALT. 3045-3475 M. (STEYERMARK, J.A., 57367. 15 JUL 1944)

F 1263858 HOLOTYPE US 1932033 ISOTYPE

- 540. TAHITENSIS BROWN, F.B.H., OCCAS. PAP. BERNICE PAUAHI BISHOP MUS.
 9(4):8. 1930.
 FRENCH POLYNESIA: --: SOCIETY ISLANDS, TAHITI, MOUNT OROHENA
 (MACDANIELS, L.H., 1542. 15 MAY 1927)
 A ISOTYPE
- 541. TAMAKII KOYAMA,T., BULL. ARTS SCI. DIV. RYUKYU UNIV. 3:75. 1959.
 RYUKYU ISLANDS: OKINAWA (PREFECTURE): OKINAWA (ISLAND), YONA
 OKINAWA (ISLAND), YONA EXPERIMENTAL FOREST OF RYUKYU
 UNIVERSITY; (COUNTRY AS "JAPAN") (KOYAMA,T., ---.
 23 NOV 1958)
 NY HOLOTYPE
- 542. TAMANA STEYERMARK, J.A., FIELDIANA, BOT. 28:70. 1951.

 VENEZUELA: TACHIRA: COLOMBIAN VENEZUALAN BOUNDARY, PARAMO DE

 TAMA; ALT. 3045-3475 M. (STEYERMARK, J.A., 57401.

 15 JUL 1944)

 F 1263857 HOLOTYPE
- 543. TENERA DEWEY, C., AMER. J. SCI. ARTS SER.1, 8:97. 1824.

 USA: MASSACHUSETTS: BERKSHIRE CO.: WILLIAMSTOWN, SADDLE MOUNTAIN (DEWEY, C., ---. 20 JUN ----)

 GH HOLOTYPE
- 544. TENERA VAR. RICHII FERNALD, M.L., PROC. AMER. ACAD. ARTS
 37:475, PL.2. 1902.
 USA: MASSACHUSETTS: MIDDLESEX CO.: MIDDLESEX FALLS (RICH, W.P.,
 ---. 05 JUN 1894)
 GH HOLOTYPE
- 545. TENERAEFORMIS MACKENZIE, K.K., BULL. TORREY BOT. CLUB 43:609. 1916.
 USA: CALIFORNIA: BUTTE CO.: JONESVILLE; ALT. 5100 FT.
 (HALL, H.M., 9781. 25 JUL 1914)
 NY HOLOTYPE
- 546. TENTACULATA VAR. ALTIOR BOOTT, F., ILL. GENUS CAREX 2:94, PL.278.
 1860.
 USA: NEW YORK: YATES CO.: PENN YAN (SARTWELL, H.P., 138. ---)
 CAS 553943 TYPE COLLECTION
- 547. TENUIFLORA VAR. SETACEA KUKENTHAL, G. IN ENGLER, H.G.A., PFLANZENR.

4, FAM.20:224. 1909.
USA: MICHIGAN: INGHAM CO.: LANSING (WHEELER, C.F., ---.
28 JUN 1890)
GH ISOTYPE

- 548. TERETIUSCULA VAR. AMPLA BAILEY, L.H., MEM. TORREY BOT. CLUB 1:53.
 1889.
 USA: OREGON: BAKER CO.: HEAD OF BURNT RIVER (CUSICK, W.C., 1331.
 -- JUL 1886)
 NY SYNTYPE
- TERRAE-NOVAE FERNALD, M.L., RHODORA 44:290, PL.711. 1942.

 CANADA: NEWFOUNDLAND: SAINT JOHN BAY, SAINT JOHN ISLAND

 (FERNALD, M.L.; WIEGAND, K.M.; LONG, B.; GILBERT-JR., F.A. AND

 HOTCHKISS, N., 27657. 31 JUL 1925)

 GH HOLOTYPE
- 550. TETSUOI OHWI,J., MISC. REP. NATL. SCI. MUS. 5:2, PL.2. 1952.
 RYUKYU ISLANDS: OKINAWA (PREFECTURE): OKINAWA (ISLAND);
 (COUNTRY AS "JAPAN") (AMANO,T., 6358. -- MAY 1951)
 US 2092356 TYPE MATERIAL
- 551. THURBERI DEWEY, C. IN TORREY, J. IN EMORY, W.H.,

 REP. U.S. MEX. BOUND. SURV., BOT. 2(1):232. 1859.

 MEXICO: SONORA: MABIBI (THURBER, G., ---. -- JUN 1850)

 GH HOLOTYPE
- 552. TOJQUIANENSIS STANDLEY,P.C. AND STEYERMARK,J.A., CEIBA 4:64. 1953.
 GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, BETWEEN
 TOJQUIA AND CAXIN (STEYERMARK,J.A., 50150. 06 AUG 1942)
 F 1129085 TYPE MATERIAL
 F 1129086 TYPE MATERIAL
- 553. TOMPKINSI HOWELL, J.T., LEAFL. W. BOT. 9:185. 1961.

 USA: CALIFORNIA: FRESNO CO.: KINGS RIVER CANYON, COPPER CREEK

 TRAIL (HOWELL, J.T., 35333. 06 JUN 1960)

 CAS 428953 HOLOTYPE

 CAS 429306 ISOTYPE

 NY ISOTYPE

 US 2604281 ISOTYPE
- 554. TOREADORA STEYERMARK, J.A., PHYTOLOGIA 9:338. 1954.

 ECUADOR: AZUAY: TOREADOR; ALT. 3810-3930 M. (STEYERMARK, J.A., 53095. 15 JUN 1943)

 F 1266183 TYPE MATERIAL

 NY ISOTYPE
- 555. TORTA VAR. STAMINATA PECK, C.H., ANNUAL REP. NEW YORK STATE MUS.
 46:131. 1893.
 USA: NEW YORK: ONEIDA CO.: TABERG (PECK, C.H., ---.
 -- JUN 1892)
 NY TYPE COLLECTION

- 556. TOWNSENDII MACKENZIE, K.K., N. AMER. FL. 18:111. 1931.

 MEXICO: CHIHUAHUA: COLONIA GARCIA; ALT. 2250 M.

 (TOWNSEND, C.H.T. AND BARBER, C.M., 157. 21 JUL 1899)

 CAS 351161 ISOTYPE

 NY ISOTYPE

 US 568126 HOLOTYPE
- 557. TRACYI MACKENZIE, K.K., ERYTHEA 8:41. 1922.
 USA: CALIFORNIA: HUMBOLDT CO.: BALD MOUNTAIN (TRACY, J.P., 4547.
 04 JUL 1914)
 NY TYPE
- 558. TRIANGULARIS BOECKELER, J.O., FLORA 39:226. 1856.
 USA: TEXAS: -- (DRUMMOND, T., ---. ---)
 NY ISOTYPE
- 559. TRIBULOIDES VAR. SANGAMONENSIS CLOKEY, I.W., RHODORA 21:84. 1919.
 USA: ILLINOIS: MACON CO.: -- (CLOKEY.I.W., 2364. 07 AUG 1915)
 UC 905441 HOLOTYPE
- 560. X TRICHINA FERNALD, M.L., RHODORA 35:219. 1933.

 USA: MAINE: AROOSTOOK CO.: FORT FAIRFIELD (WILLIAMS, E.F.;

 COLLINS, J.F. AND FERNALD, M.L., 11C. 19 JUL 1902)

 GH HOLOTYPE
- 561. TRICHOPHYLLA NELMES,E., MEM. MUS. NATL. HIST. NAT., SER. B, BOT. 4:106. 1955.

 VIET-NAM, NORTH: TONKIN: CHAPU: (COUNTRY AS "INDOCHINA")

 (PETFLOT,P.A.. 5325. -- JUL 1030)

 GH HOLOTYPE
- 562. TRISPERMA DEWEY, C., AMER. J. SCI. ARTS SER.1, 9:63. 1825.

 USA: MASSACHUSETTS: -- (DEWEY, C., ---.)

 NY

 ISOTYPE
- 563. TRISPERMA VAR. BILLINGSII KNIGHT, O. W., RHODORA 8:185. 1906.

 USA: MAINE: SOMERSET CO.: PLEASANT RIDGE, JEWETT BROOK BOG

 (WARE, R.A.; ROLLINS, S. AND KNIGHT, O. W., 5066. 05 JUL 1906)

 GH

 ISOTYPE
- 564. TSOI MERRILL, F.D. AND CHUN, N.K., SUNYATSENIA 2:207. 1935.

 CHINA: KWANGTUNG: HAINAN (ISLAND), DUNG KA TO WEN FA SHI

 (CHUN, N.K. AND TSO, C.L., 43680. -- -- 1932-1933)

 GH ISOTYPE

 NY TYPE

 US 167512C TYPE MATERIAL
- 565. TUMULICOLA MACKENZIE, K.K., BULL. TORREY BOT. CLUB 34:154. 1907.
 USA: CALIFORNIA: ALAMEDA CO.: LAKE TEMESCAL (BIOLETTI, F.T., 1.
 25 JUN 1893)
 NY HOLOTYPE
- 566. TUNIMANENSIS STANDLEY, P.C. AND STEYERMARK, J.A., CEIBA 4:65. 1953.

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GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, TUNIMA (STEYERMARK, J. A., 48334. 07 JUL 1942)

F 1128966 TYPE
```

567. TURGESCENS TORREY, J., ANN. LYCEUM NAT. HIST. NEW YORK 3:419. 1836. USA: LOUISIANA: ORLEANS PARISH: NEW ORLEANS (INGALLS, T., ---.)

NY TYPE

568. TURUMIQUIRENSIS STEYERMARK, J. A., FIELDIANA, BOT. 28:70, FIG.7. 1951.

VENEZUELA: SUCRE: CERRO TURUMIQUIRE, RIDGE DIVIDING HEADWATERS OF RIO MANZANARES AND RIO DE AMANA; ALT. 1900-2000 M. (STEYERMARK, J.A., 62705. 10 MAY 1945)

F 1266150 HOLOTYPE
GH ISOTYPE
NY ISOTYPE
US 1933688 ISOTYPE

-U-

569. ULTRA BAILEY, L.H., PROC. AMER. ACAD. ARTS 22:83. 1886 ("1887").
USA: ARIZONA: COCHISE CO.: HUACHUCA (LEMMON, J.G., 2.

21 JUN 1882)

DS 63991 ISOTYPE DS 64032 ISOTYPE

570. UMBELLATA VAR. VICINA DEWEY, C., AMER. J. SCI. ARTS SER.1, 11:317.

1154: -

USA: --: -- (DEWEY,C., ---. ---)
GH HOLOTYPE

571. UNCOMPAHGRE KELSO,L., BIOL. LEAFL. 38:1. 1947.
USA: COLORADO: LA PLATA CO.: LA PLATA MOUNTAINS, MOUNT
HESPERUS, GOLD KING MINE (KELSO,L., 6058. 03 JUL 1947)
GH ISOTYPE

572. UNDERWOODII BRITTON, N.L., TORREYA 5:10. 1905.

JAMAICA: --: SALT HILL MARSH (UNDERWOOD, L.M., 158.

29 JAN 1903)

NY TYPE

573. UNILATERALIS MACKENZIE, K.K., ERYTHEA 8:43. 1922.
USA: CALIFORNIA: HUMBOLDT CO.: ALTON (TRACY, J.P., 3783.
21 JUL 1912)
NY TYPE

- 574. VAGANS HOLM, H.T., AMER. J. SCI. SER.4, 17:301. 1904.
 USA: OREGON: HARNEY CO.: STEEN MOUNTAIN, ANDREWS (LEIBERG, J.B.,
 2558. 10 JUL 1896)
 NY ISOTYPE
- 575. VAGINATA VAR. ALTO-CAULIS DEWEY, C., AMER. J. SCI. ARTS
 SER. 2, 41:227. 1866.
 USA: NEW YORK: GENESEE CO.: BERGEN (PAINE, J.A., ---.)
 GH HOLOTYPE
- 576. VALLICOLA DEWEY, C., AMER. J. SCI. ARTS SER.2, 32:40. 1861.
 USA: WYOMING: TETON CO.: SNAKE RIVER, JACKSON HOLE VALLEY
 (DEWEY, C., 10. 18 JUN 1860)
 GH HOLOTYPE
- 577. VENOSIVAGINATA STANDLEY,P.C. AND STEYERMARK,J.A., CEIBA 4:67.
 1953.
 GUATEMALA: HUEHUETENANGO: SIERRA DE LOS CUCHUMATANES, CERRO
 HUTZ, BETWEEN MIMANHUITZ AND YULHUITZ; ALT. 2600 M.
 (STEYERMARK,J.A., 48554. 14 JUL 1942)
 F 1129094 HOLOTYPE
 GH ISOTYPE
- 578. VERNACULA VAR. HOBSONII MAGUIRE,B., BRITTONIA 5:199. 1944.

 USA: UTAH: BEAR RIVER RANGE, WHITE PINE LAKE (MAGUIRE,B.;

 HOBSON,D.A. AND MAGUIRE,R.R., 14013. 16 JUL 1936)

 CAS 348507 ISOTYPE

 GH ISOTYPE

 NY HOLOTYPE

ISOTYPE

- 579. VESICARIA VAR. JEJUNA FERNALD, M.L., RHODORA 3:53. 1901.

 USA: MAINE: AROOSTOOK CO.: MADAWASKA LAKE (WILLIAMS, E.F., ---.

 AUG 1900)

 GH HOLOTYPE
- 580. VESICARIA VAR. LAURENTIANA FERNALD, M.L., RHODORA 35:232. 1933.

 CANADA: NEWFOUNDLAND: SAINT JOHN'S (FERNALD, M.L.; LONG, B. AND FOGG-JR., J.M., 1474. 31 JUL 1929)

 GH HOLOTYPE
 US 2050647 ISOTYPE
- 581. VESTITA VAR. KENNEDY! FERNALD, M.L., RHODORA 2:170. 1900.

 USA: MASSACHUSETTS: MIDDLESEX CO.: WILMINGTON, SILVER LAKE

 (KENNEDY, G.G., ---. 11 JUN 1899)

 GH HOLOTYPE
- 582. VEXANS HERMANN, F.J., RHODORA 57:156. 1955.

1872573

US

- USA: FLORIDA: HENDRY CO.: CLEWISTON (DEAM, C.C., 61177.
 19 MAR 1941)
 US 2231425 HOLOTYPE
- 583. VICARIA BAILEY, L. H., MEM. TORREY BOT. CLUB 1:49. 1889.

 USA: OREGON: -- (HALL, E., --- 1871)

 GH HOLOTYPE
- 584. VIOLACEA CLARKE, C.B., BULL. MISC. INFORM. ADD.SER.8:87. 1908.
 USA: COLORADO: ROCKY MOUNTAINS; LAT. 39-41 N. (HALL, E. AND
 HARBOUR, J.P., 587. -- -- 1862)
 MO TYPE COLLECTION
- 585. VIRIDIOR MACKENZIE, K.K. IN ABRAMS, L., ILL. FL. PACIFIC STATES
 1:331. 1923.
 USA: WASHINGTON: OKANOGAN CO.: SHEEP MOUNTAINS (EGGLESTON, W.W.,
 3329. 30 JUL-01 AUG 1916)
 US 886234 TYPE
- 586. VIRIDULA FOR. PYGMAEA LEPAGE, E., NATURALISTE CANAD. 89:115. 1962.

 CANADA: QUEBEC: UNGAVA BAY, SWAMPY BAY (DUTILLY, A. AND

 LEPAGE, E., 39274. 16 AUG 1961)

 GH ISOTYPE
- 587. VITIENSIS ST.JOHN, H., PACIFIC SCI. 1:116, FIG.1. 1947.

 FIJI: --: VITI LEVU (ISLAND) (ST.JOHN, H., 18330. 18 AUG 1937)

 US 1967819 ISOTYPE
- 588. VITREA HOLM, H.T., AMER. J. SCI. SER.4, 17:302. 1904.

 USA: CALIFORNIA: RIVERSIDE CO.: PALM SPRINGS (PARISH, S.B.,
 4144. 04-13 APR 1896)

 F 8912C TYPE MATERIAL

 MO ISOTYPE

 US 279151 ISOTYPE
- 589. VULPINOIDEA VAR. PYCNOCEPHALA HERMANN, F.J., RHODORA 38:363. 1936.
 USA: MICHIGAN: EMMET CO.: BIG STONE BAY (HERMANN, F.J., 64C8.
 14 AUG 1934)
 GH HOLOTYPE

-W-

- 590. WAHUENSIS VAR. RUBIGINOSA KRAUSS,R., PACIFIC SCI.
 4:257, FIG.2,3A-D. 1950.
 USA: HAWAII: KILAUEA IKI (BEAN,R.S.; HOSAKA,E.Y. AND
 ST.JOHN,H., 11228. 21 DEC 1931)
 US 2074653 TYPE COLLECTION
- 591. WATSONI OLNEY, S.T. IN WATSON, S., BOT. U.S. GEOL. EXPLOR. 40TH PAR. 370. 1871.
 USA: NEVADA: ORMSBY CO.: CARSON CITY (WATSON, S., 1246.

-- MAY 1868) GH

HOLOTYPE

592. WERDERMANNII GROSS, R. IN WERDERMANN, E.,

NOTIZBL. BOT. GART. BERLIN-DAHLEM 10:763. 1929.

CHILE: LLANQUIHUE: ALT. 700 M. (WERDERMANN, E., 1687.

-- MAR 1925)

NY TYPE COLLECTION

593. WHITNEYI OLNEY, S.T. IN GRAY, A., PROC. AMER. ACAD. ARTS 7:394.

USA: CALIFORNIA: TUDLUMNE CO.: MOUNT DANA; ALT. 12000 FT. (BOLANDER, H.N., 5086. -- -- 1866)

MO SYNTYPE SYNTYPE

USA: CALIFORNIA: MARIPOSA CO.: YOSEMITE NATIONAL PARK, YOSEMITE VALLEY (BOLANDER, H.N., 6198. -- --- 1866)

F 309085 SYNTYPE
F 309086 SYNTYPE
MO SYNTYPE
NY SYNTYPE

USA: CALIFORNIA: NEVADA CO.: SODA SPRINGS; ALT. 9000 FT. (BREWER, W.H., 1778. 04 JUL 1863)

MO SYNTYPE NY SYNTYPE

- 594. WIEGANDII MACKENZIE, K.K., N. AMER. FL. 18:108. 1931.

 CANADA: NEWFOUNDLAND: BAY OF ISLANDS, HUMBER ARM, CURLING

 (FERNALD, M.L. AND WIEGAND, K.M., 2776. 21 JUL 1910)

 GH ISOTYPE
- 595. WILKESII TORREY, J. IN WILKES, C., U.S. EXPLOR. EXPED. 17:477, PL.17.
 1854.
 USA: CALIFORNIA: SACRAMENTO RIVER (WILKES EXPLOR. EXPED., ---.
 1838-1842)

NY TYPE COLLECTION

596. WILLDENOVII VAR. PAUCIFLORA

NY

OLNEY, S.T. EX BAILEY, L.H. IN COULTER, J.M., CONTR. U.S. NATL. HERB. 2:482. 1894.

USA: TEXAS: HARRIS CO.: HOUSTON (HALL, E., ---. -- 1872)
GH TYPE COLLECTION

597. WILLDENOWII VAR. MEGARRHYNCHA HERMANN, F.J., AMER. MIDL. NATURALIST 51:277. 1954.

USA: GEORGIA: JASPER CD.: OCMULGEE (SMITH,S.J. AND DUNCAN,W.H., 4872. 06 APR 1949)

JS 2133191 TYPE COLLECTION

598. WILLIAMSII BRITTON, N.L., BULL. NEW YORK BOT. GARD. 2:159. 1901.
CANADA: YUKON TERRITORY: DAWSON (WILLIAMS, R.S., ---.
12 JUN 1899)

TYPE

- 599. WOODII DEWEY, C., AMER. J. SCI. ARTS SER. 2, 2:249. 1846.
 USA: NEW YORK: JEFFERSON CO.: PERCH LAKE, PERCH RIVER
 (CRAWE, I.B. AND WOOD, W.A., ---. ---)
 GH HOLOTYPE
- 600. WRIGHTII DEWEY,C. IN TORREY,J. IN EMORY,W.H.,

 REP. U.S. MEX. BOUND. SURV., BOT. 2(1):232. 1859.

 USA: TEXAS: -- (WRIGHT,C., 1561. -- -- 1850)

 NY TYPE COLLECTION

- X -

601. X XANTHINA FERNALD, M.L., RHODORA 35:23C. 1933.

CANADA: NEWFOUNDLAND: MAIN RIVER (FERNALD, M.L. AND LONG, B.,
1455. 27 AUG 1929)

GH HOLOTYPE

GH HOLOTYPE US 2050636 ISOTYPE

- 602. XANTHOCARPA VAR. ANNECTANS BICKNELL, E.P., BULL. TORREY BOT. CLUB
 23:23. 1896.
 USA: NEW YORK: LONG ISLAND, RICHMOND VALLEY (BRITTON, N.L., ---.
 C6 JUL 1895)
 NY TYPE
- 603. XERANTICA BAILEY, L.H., BOT. GAZ. 17:151. 1892.

 CANADA: SASKATCHEWAN: FILE HILLS; 50.5N., 104W. (MACOUN, JOHN, ---. 04 JUL 1879)

 GH SYNTYPE

 NY SYNTYPE

604. XEROCARPA WRIGHT, S.H. IN DEWEY, C., AMER. J. SCI. ARTS
SER. 2, 42:334. 1866.
USA: NEW YORK: STEUBEN CO.: PRATTSBURGH (WRIGHT, S.H., ---.)

TYPE COLLECTION

NY

-Y-

605. YUKONENSIS BRITTON, N.L., BULL. NEW YORK BOT. GARD. 2:159. 1901.

CANADA: YUKON TERRITORY: BONANZA RIVER (WILLIAMS, R.S., ---.

18 JUN 1899)

NY TYPE

-Z-

606. ZIZANIAEFOLIA RAYMOND, M., MEM. JARD. BOT. MONTREAL 53:36. 1959.

CHINA: YUNNAN: -- (TSAI, H.T., 62809. -- -- 1934)
A HOLOTYPE

AUTHOR INDEX

AU	THOR INDEX	
AUTHOR	DATE	SPECIES
BAILEY, L. H.	1935	ABLATA
	1889	ACUTINA
	1889	ALBIDA
	1889	ALMA
	1893	AUSTRO-CAROLINIANA
	1886	*BRONGNIARTII
	1889	CALIFORNICA
	1884	*CANE SCENS
	192 0	CHIKUNGANA
	1889	COMMUNIS
	1889	DONNELL-SMITHII
	1893	DURIFOLIA
	1896	EGGERTII
	1889	ELEOCHARIS
	1886	ENGELMANNI
	1889	*FESTIVA
	1893	FETA
	1889	*FOENEA
	1886	*GAYANA
	1889	*GR I SEA
	1884	HALLIANA
	1896	HASSEI
	1889	*HOODII
	1896	IDAHOA
	1889	ILLOTA
	1886	INOPS
	1893	INTERIOR
	1889	JONESII
	1920	KULINGANA
	1898 1886	MADRENSIS
		*MARCIDA
	1916 1889	MARIPOSANA ≉MILIARIS
	1892	MONTANENSIS
	1896	*NEBRASKENSIS
	1885	NERVINA
	1898	OAXACANA
	1888	PANSA
	1892	PRINGLEI
	1891	QUADRIFIDA
	1891	*QUADRIFIDA
	1886	*RETROCURVA
	1888	*ROSEA
	1898	SEATONIANA
	1889	SPECIFICA
	1889	SPRETA
	1893	*STERILIS
	1889	*STRAMINEA
	1007	*CTD A MINITA

1889

*STRAMINEA

AUTHOR	DATE	SPECIES
BAILEY, L. H.	1886	*STYLOSA
	1889	*TERETIUSCULA
	1886	UL TRA
	1889	VICARIA
	1892	XERANTICA
BAILEY, L. H. IN MACOUN, JOHN	1890	*PRATENSIS
BICKNELL, E.P.	1908	ABDITA
	1908	INCOMPERTA
	1896	*XANTHOCARPA
BLAKE, S.T.	1947	ACROPHILA
·	1947	BREVIS
	1947	EREMOSTACHYA
	1947	LAMPROCHLAMYS
	1947	MELANOPHORA
	1947	PERILEIA
BOECKELER, J.O.	1877	BURCHELLIANA
	1896	DURANĎII
	1875	FENDLERIANA
	1886	FUSCOLUTEA
	1877	*LONGIROSTRIS
	1896	MANDONIANA
	1856	TRIANGULARIS
BOOTT, F.	1867	*ACUTA
	1846	BANKSII
	1867	BREWERI
	1862	CONJUNCTA
	1858	*CRINITA
	1846	GEYERI
	1846	GRIFFITHII
	1867	HEBETATA
	1867	LACINIATA
	1867	OLIGANTHA
	1859	PARCIFLORA
	1846	SANGUINEA
	1862	*SCOPARIA
	1860	*TENTACULATA
BOOTT, F. IN GRAY, A.	1863	*BONPLANDII
	1859	CONFERTIFLORA
	1859	MICANS
	1859	NANA
	1859	PAPULOSA
	1859	PICTA
BOOTT, F. IN HOOKER, W.J.	1839	APERTA
	1839	BACKII
	1839	FRANKLINII
	1839	HEPBURNII
BOOTT, W.	1884	ASSINIBOINENSIS
	1884	LEMMONI
	1884	PRAEGRACILIS

AUTHOR	DATE	SPECIES
BOOTT, W. IN WATSON, S.	1880	HETERONEURA
	1880	KELLOGGII
	1880	NUDATA
	1880	PHYLLOMANICA
	1883	SCHAFFNERI
	1880	*SCOPARIA
DOITTON N. I	188 0 1901	SUBFUSCA
BRITTON, N.L.	1895	BONANZENSIS *STRICTA
	1905	
	1905	UNDERWOODII WILLIAMSII
	1901	YUKONENSIS
BROWN, F.B.H.	1930	TAHITENSIS
BROWN, R. IN RICHARDSON, J. IN FRANKLIN, J.	1819	PODOCARPA
Drowings IN KICHARDSDINGS IN FRANKLINGS.	1819	RICHARDSONII
BUCKLEY, S.B.	1843	CAROLINIANA
DOCKELI (3 · D ·	1843	MISERA
	1843	STYLOFLEXA
CAREY, J.	1847	PLATYPHYLLA
CARETYON	1847	SYCHNOCEPHALA
CHAMISSO, L.A. EX STEUDEL, E.G.	1855	PACHYSTACHYA
CHAPMAN, A.W.	1860	*DIGITALIS
	1860	*STELLULATA
CHAPMAN, A.W. EX BOOTT, F.	1862	*STIPATA
CHAPMAN, A.W. EX DEWEY, C.	1847	BALTZELLII
CHEE SEMAN, T.F.	1892	*COMANS
	1883	DEVIA
	1884	PETRIEI
CLARKE, C.B.	1908	AEQUA
	1908	FELIPENSIS
	1903	ICHANGENSIS
	1903	LANCIFOLIA
	1903	*LONGICRURIS
	1904	PRAINII
	1908	PSEUDOJAPONICA
	1907	SUBTRANSVERSA
	1908	VIOLACEA
CLARKE, C.B. IN MERRILL, E.D.	1906	RHYNCHACHAENIUM
CLAUSEN, R.T. AND WAHL, H.A.	1939	*ANGUSTIOR
CLOKEY, I.W.	1922	APODA
	1919	ARAPAHOENSIS
	1939	*INTERIOR
	1922	PAYSONIS
	1919	SUBIMPRESSA
	1919	*TRIBULOIDES
CRONQUIST, A.	1943	OBOVOIDEA
CURTIS, M.A. EX GRAY, A.	1841	AESTIVALIS
DEWEY, C.	1849	*ALOPECOIDEA
	1835	ARCTICA

AUTHOR	DATE	SPECIES
DEWEY, C.	1854	*ARISTATA
	1836	BACKANA
	1845	BUCKLEYI
	1842	*CEPHALOPHORA
	1826	COLLECTA
	1836	COLUMBIANA
	1861	*DOUGLASII
	1836	FESTIVA
	1846	FLACCOSPERMA
	1824	FORMOSA
	1846	HALEI
	1826	HALSEYANA
	1854	HAYDENII
	1826	HITCHCOCKIANA
	1836	HOOKERANA
	1849	IGNOTA
	1847	ILLINOENSIS
	1857	LAEVI-CONICA
	1846	LEAVENWORTHII
	1842	MEADII
	1857	MEEKII
	1836	MIRABILIS
	1854	NEBRASKENSIS
	1842	NUTTALLII
	1835	PARRYANA
	1836	PETASATA
	1836	PETRICOSA
	1861	RAYNOLDSII
	1842	SARTWELLII
	1825	SCHWEINITZII
	1826	SICCATA
	1824	TENERA
	1825	TRISPERMA
	1826	*UMBELLATA
	1866	*VAGINATA
	1861	VALLICOLA
05059 0 10 70059 1 10 50009	1846	WOODII
DEWEY, C. IN TORREY, J. IN EMORY, W.H.	1859	BARBARAE
	1859	THURBERI
DEHEV 6 TAL HOOD 4	1859	WRIGHTII
DEWEY, C. IN WOOD, A.	1845	COOLEYI
	1861	*HIRSUTA
	1845	PRAIREA
DREADR C T N	1845	RETROCURVA
DREJER, S.T.N.	1841	PRATENSIS
ESSENBACH, N. VON IN LEHMANN, J.	1846	PREISSII
FERNALD, M.L.	1942	*ABSCONDITA
	1942	X ABSCONDITIFORMIS
	1902	AENEA

NUMBER 12 109

AUTHOR DATE SPECIES 1902 *ALATA FERNALD, M.L. 1942 *AMPHIBOLA 1942 BAYARDI 1902 *CANESCENS 1907 CILIARIS 1902 CRAWFORDII 1902 *CRAWFORDII 1946 *CRINITA 1897 *CRINITA 1937 *CRUS-CORVI 1942 *CUMULATA 1942 *DEBILIS 1913 *DEWEYANA 1941 *DIGITALIS 1938 *DIGITALIS 1902 *ECHINATA 1906 *FLAVA 1935 **GARBERI** 1935 *GARBERI 1906 *GLAREOSA 1906 HARPERI 1906 HORMATHODES 1942 *INFLATA 1906 ***INTERIOR** 1942 ***INTUMESCENS** 1901 KATAHDINENSIS 1933 LANGEANA 1942 *LASIOCARPA 1906 *LAXIFLORA 1926 *LIVIDA 1902 *MIRABILIS 1902 *MIRABILIS 1915 MISANDROIDES 1902 ORONENSIS 1942 *PALLE SCENS 1918 *PAUPERCULA 1906 *PAUPERCULA 1907 PERLONGA 1933 X PSEUDO-FULVA 1942 *RICHARDSONII 1941 RUGATA 1902 *SCOPARIA 1921 *SCOPARIA 1902 *STRAMINEA

1902

1942

1933

19C1

1933

*TENERA

X TRICHINA

*VESICARIA

***VESICARIA**

TERRAE-NOVAE

AUTHOR	DATE	SPECIES
FERNALD, M.L.	1900	*VESTITA
	1933	X XANTHINA
FERNALD, M.L. AND WEATHERBY, C.A.	1931	CLIVICOLA
FERNALD, M.L. AND WIEGAND, K.M.	1911	*HORNSCHUCH I ANA
	1924	*HOSTI ANA
	1912	*SCOPARIA
	1910	*SCOPARIA
FRANCHET, A.	1895	FARGESII
	1896	PTEROLEPTA
FRANCHET, A. AND SAVATIER, L.	1879	MACROGLOSSA
	1879	*NUTANS
	1879	PLANATA
	1879	PODOGYNA
GANDOGER, M.	1920	CRANDALLII
GAUDIN, J. F. G. P.	1830	*FLAVA
GRAY, A.	1867	*DEBILIS
GRAY, A. EX TORREY, J.	1836	*OLIGOCARPA
GROSS,R.	1941	*PHALAROIDES
	1941	*PIRCHINCHENSIS
	1941	*PURPUREOVAGINATA
	1941	SALTAENSIS
GROSS, R. IN WERDERMANN, E.	1929	WERDERMANNII
HEMSLEY, W.B.	1885	POTOSINA
HERMANN, F.J.	1955	AMPL I SQUAMA
	1938	*ARTITECTA
	1957	ATHABASCENSIS
	1950	ATRACTODES
	1963	*BIPARTITA
	1967	CHIAPENSIS
	1938	X DEAMII
	1960	*EGGLESTONII
	1957	EURYSTACHYA
	1965	*FISSA
	1971	GUATEMALENSIS
	1957	INCONDITA
	1941	*INTERIOR
	1938	*LAXIFLORA
	1956	LIMNOPHILA
	1968	*MICROPTERA
	1937	PELOCARPA
	1950	PERCOSTATA
	1964	PLECTOCARPA
	1957	*PRATICOLA
	195 0	QUICHENSIS
	1948	ROANENSIS
	1955	VE XANS
	1936	*VULPINOIDEA
	1954	*WILLDENOWII
HERMANN, F.J. IN MCVAUGH, R.	1949	MURICULATA

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AUTHOR	DATE	SPECIES
HOCHSTETTER, C.F. EX STEUDEL, E.G.	1855	MERCARENSIS
HOLM, H.T.	1903	ACCEDENS
	1905	BRACHYPODA
	1905	CAMPLYOCARPA
	1903	CHALCIOLEPIS
	1900	ELYNOIDES
	1905	EURYCARPA
	1903	*FESTIVA
	1902	GYMNOCLADA
	1904	LACUNARUM
	1905	*LUZULAEFOLIA
	1904	MICROCHAETA
	1905	OXYCARPA
	1905	PACHYSTOMA
	1904	PHAEOLEPIS
	1904	PHYSOCHLAENA
	1902	PRIONPHYLLA
	1904	*SCIRPOIDEA
	1904	*SCIRPOIDEA
	1904	VAGANS
	1904	VITREA
HOOKER, J.D.	1887	SCAPOSA
HOWE, E.C. IN GORDINIER, H.C. AND HOWE, E.C.	1894	ROSAEOIDES
HOWELL, J. T.	1958	JEPSONII
	1949	SPECUICOLA
== = = =	1961	TOMPKINSI
HULTEN, O.E.G.	1942	JACOBI-PETERI
JONES, M.E.	1910	ABORIGINUM
	1910	ELRODI
KET CO T	1910	STANTONENSIS
KELSO, L.	1945	ELBERTANA
	1950 1945	ER XLEBENIANA HAGIANA
	1945	UNCOMPAHGRE
KNIGHT, O. W.	1906	*TRISPERMA
KOYAMA, T.	1969	OBLANCEOLATA
KOTANA Y 1 *	1959	TAMAKII
KRAUSS, R.	1950	KAUAIENSIS
KKA033 y K •	1950	*PLUVICA
	1950	*WAHUENSIS
KRECZETOWICZ, V.I.	1934	PHILOCRENA
KUKENTHAL, G.	1929	*APERTA
	1929	*APERTA
	1910	ARSENII
	1910	*BRUNNEA
	1926	CUBENSIS
	1926	*CUBENS IS
	1926	EKMANII
	1910	ELMERI

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KUKENTHAL,G.	1929	*EURYCARPA
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	1910	*JAMESONI
	1910	MERRILLII
	1902	MICRANTHA
	1899	*MICROGLOCHIN
	1911	PYCNOTHYSOS
	1910	RAMOSII
	1938	SARAWAKETENSIS
	1935	SAVAIIENSIS
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	192 0	*SUKSDORFII
KUKENTHAL, G. AND EKMAN, E.L.	1929	*EKMANII
KUKENTHAL, G. IN ELMER, A.D.E.	1911	PALAWANENSIS
KUKENTHAL, G. IN ENGLER, H.G.A.	1909	*AQUATILIS
	1909	*CLADOSTACHYA
	1909	*FILIFOLIA
	19 0 9	*HINDSII
	1909	*LEMANNI ANA
	1909	*LENTICULARIS
	1909	*NUDATA
	1909	*PINETORUM
	1909	*STIPATA
	1909	*TENUIFLORA
KUNTH, C.S.	1837	STEUDELII
LEPAGE, E.	1956	X DUMANII
	1956	X EXSALINA
	1964	X NEOBIGELOWII
	1956	X NEOFILIPENDULA
	1956	X NEOPALEACEA
	1957	X NUBENS X PATUENSIS
	1962 1964	X QUEBECENSIS
	1956	*X SAXENII
	1962	*VIRIDULA
LITVINOV, D. I.	1899	*STENOPHYLLA
MACKENZIE, K.K.	1909	ABRAMSII
THOREIZ I LYNON	1916	ABRUPTA
	1935	ACUTINELLA
	1910	AESTIVALIFORMIS
	1906	AGGLOMERATA
	1910	AGGREGATA
	1907	AGROSTOIDES
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	1931	AUTUMNALIS
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	1910	BILTMOREANA
	1913	BRAINERDII

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MACKENZIE, K.K.	1913	BREVICAULIS
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ı	1910	MESOCHOREA
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	1916	PACHYCARPA

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MACKENZIE, K.K.	1922	PAUCICOSTATA
	1907	PERGLOBOSA
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	1935	PURPURIFERA
	1915	RUGOSPERMA
	1915	RUSBYI
	1931	RUTHII
	1909	SALINAEFORMIS
	1906	SAXIMONTANA
	1908 1908	SCABRIUSCULA
	1915	SCIRPIFORMIS
	1915	SHELDONII
	1907	SIMULATA SMALLIANA
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	1916	SUB-BRACTEATA
	1916	TENERAEFORMIS
	1931	TOWNSENDII
	1922	TRACYI
	1907	TUMULICOLA
	1922	UNILATERALIS
	1931	WIEGANDII
MACKENZIE, K.K. EX BRIGHT, J.	1930	LARICINA
MACKENZIE, K. K. IN ABRAMS, L.	1923	NEUROPHORA
The state of the s	1923	SUBORBICULATA
	1923	VIRIDIOR
MACKENZIE, K.K. IN PIPER, C.V. AND BEATTIE,	1915	CUSICKII
	1915	PIPERI
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	1917	EPAPILLOSA
	1917	INCURVIFORMIS
	1917	LEPTOPODA
	1917	NELSONII
MACKENZIE, K.K. IN SMALL, J.K.	1913	MAGNIFOLIA
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	1944	RACHILLIS
	1944	*VERNACULA
MAGUIRE, B. AND HOLMGREN, A.H.	1946	*CAMPYLOCARPA
MARIE-VICTORIN, (FRERE)	1929	*OEDERI
MERRILL, E.D.	1918	BAMBUSETORUM
	1934	*RUBRO-BRUNNEA
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MEYER, C.A.	1831	CIRCINNATA
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MOHR, C.	1910	*STIPATA
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NELMES, E.	1938	EXPLORATORUM
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O'NEILL, H.T.	1940	BARTLETTII
O'NEILL, H.T. AND DUMAN, M.	1941	DUTILLYI
OHWI . J.	1934	APODOSTACHYA
CHAIYOU	1931	CUNEATA
	1934	HATUSIMANA
	1932	HYMENODON
	1933	KURILENSIS
	1932	RUGATA
	1952	TETSUOI
OLNEY, S.T.	1871	PORTERI
OLNEY, S.T. EX BAILEY, L.H.	1884	*ADUSTA
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	1886	OREGONENSIS
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PIPER, C. V.	1906	*HOODII
	1906	PHAEOCEPHALA
PORSILD, A.E.	1943	*ATROFUSCA
	1939	KOKRINENSIS
	1939	MELOZITNENSIS
20.504	1943	MORRISSEYI
PRESL, K.B.	1828	ANTHOXANTHERA

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RAUP, H.M.	1947	SOPERI
RAYMOND, M.	1959	SURCULOSA
	1959	ZIZANIAEFOLIA
ROACH, A.W.	1952	DIVERSISTYLIS
RYDBERG, P.A.	1901	EBENEA
SARTWELL, H.P. EX DEWEY, C.	1855	CHAPMANI
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SCHWEINITZ, L.D.	1824	COSTATA
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	1824	GRACILLIMA
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STEUDEL, E.G.	1855	AMPHIBOLA
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	1855	MACROKOLEA
	1855	PICTA
	1855	PRESLII
	1855	PTYCHOCARPA
STEYERMARK, J. A.	1964	AZUAYAE
	1951	CULMENICOLA
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	1951	RORAIMENSIS
	1952	STANDLEYANA
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1837	TURGESCENS STEUDELII	TORREY, J. KUNTH, C.S.
1839	APERTA	BOOTT, F. IN HOOKER, W.J.
1033	BACKII	BOOTT, F. IN HOOKER, W.J.
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1045	*CANESCENS	TUCKERMAN, E.
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1845	BUCKLEYI	DEWEY . C .
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	RETROCURVA	DEWEY, C. IN WOOD, A.
1846	BANKSII	BOOTT, F.
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1867	*ACUTA BREWERI *DEBILIS HEBETATA LACINIATA OLIGANTHA	BOOTT,F. BOOTT,F. GRAY,A. BOOTT,F. BOOTT,F. BOOTT,F.
1868	ATHROSTACHYA CINNAMOMEA GLAUCODEA GYNODYNAMA LUZULINA SARTWELLIANA WHITNEYI	OLNEY,S.T. IN GRAY,A. OLNEY,S.T. IN GRAY,A. TUCKERMAN,E. EX OLNEY,S.T. IN GRAY,A.
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1879	MACROGLOSSA *NUTANS PLANATA PODOGYNA	FRANCHET, A. AND SAVATIER, L.
1880	HETERONEURA	BOOTT, W. IN WATSON, S.

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1880	KELLOGGII MENDOCINENSIS NUDATA PHYLLOMANICA *SCOPARIA SUBFUSCA	BOOTT, W. IN WATSON, S. OLNEY, S.T. EX BOOTT, W. IN WATSON, S.
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1882	LONGICULMIS	PETRIE, D.
1883	DEVIA	CHEESEMAN, T.F.
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1888	*DE WEYANA	OLNEY, S.T. EX BAILEY, L.H.
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	*ROSEA	BAILEY, L.H.
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	ALBIDA	BAILEY, L. H.
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	COMMUNIS	BAILEY, L. H.
	DONNELL-SMITHII	BAILEY,L.H.
	ELEOCHARIS	BAILEY, L. H.
	*FESTIVA	BAILEY, L. H.
	*FOENEA	BAILEY, L. H.
	*GRISEA	BAILEY, L.H.
	*HOODII	BAILEY, L.H.
	ILLOTA	BAILEY, L. H.
	JONESII	BAILEY, L.H.
	*MILIARIS	BAILEY, L.H.
	SPECIFICA	BAILEY, L.H.

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1889	SPRETA	BAILEY, L. H.
	*STRAMINEA	BAILEY, L.H.
	*STRAMINEA *TERETIUSCULA	BAILEY,L.H. BAILEY,L.H.
	VICARIA	BAILEY,L.H.
1890	*PRATENSIS	BAILEY, L. H. IN MACOUN, JOHN
1891	QUADRIFIDA	BAILEY, L. H.
10)1	*QUADRIFIDA	BAILEY, L.H.
1892	*COMANS	CHEESEMAN, T.F.
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	*TORTA	PECK, C.H.
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1070	EGGERTII	BAILEY, L. H.
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	SEATONIANA	BAILEY, L. H.
1899	*MICROGLOCHIN	KUKENTHAL, G.
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1001	*VESTITA	FERNALD, M. L.
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1902	AENEA	FERNALD, M.L.
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1902	*CANESCENS	FERNALD, M.L.
• • •	CRAWFORDII	FERNALD, M.L.
	*CRAWFORDII	FERNALD, M. L.
	*ECHINATA	FERNALD.M.L.
	GYMNOCLADA	HOLM, H.T.
	MICRANTHA	KUKENTHAL,G.
	*MIRABILIS	FERNALD, M. L.
	*MIRABILIS	FERNALD, M.L.
	ORONENSIS	FERNALD, M. L.
	PRIONPHYLLA	HOLM, H.T.
	*SCOPARIA	FERNALD, M.L.
	*STRAMINEA	FERNALD, M. L.
	*TENERA	FERNALD, M.L.
1903	ACCEDENS	HOLM, H.T.
•	CHALCIOLEPIS	HOLM, H.T.
	*FESTIVA	HOLM, H.T.
	I CHANGENS IS	CLARKE, C.B.
	LANCIFOLIA	CLARKE, C.B.
	*LONGICRURIS	CLARKE, C.B.
1904	LACUNARUM	HOLM, H.T.
	MICROCHAETA	HOLM, H.T.
	PHAEOLEPIS	HOLM, H.T.
	PHYSOCHLAENA	HOLM, H.T.
	PRAINII	CLARKE.C.B.
	*SCIRPOIDEA	HOLM, H.T.
	*SCIRPOIDEA	HOLM, H.T.
	VAGANS	HOLM, H.T.
	VITREA	HOLM, H.T.
1905	AUSTROMONTANA	PARISH, S.B.
•	BRACHYPODA	HOLM, H.T.
	CAMPLYOCARPA	HOLM, H.T.
	EURYCARPA	HOLM, H.T.
	JACINTOENSIS	PARISH, S.B.
	*LUZULAEFOLIA	HOLM, H.T.
	OXYCARPA	HOLM, H.T.
	PACHYSTOMA	HOLM, H.T.
	UNDERWOODII	BRITTON, N. L.
1906	AGGL OMERATA	MACKENZIE, K.K.
	CONCINNOIDES	MACKENZIE, K.K.
	*FLAVA	FERNALD, M. L.
	*GLAREOSA	FERNALD, M.L.
	HARPERI	FERNALD, M. L.
	*HOODII	PIPER,C.V.
	HORMATHODES	FERNALD, M.L.
	*INTERIOR	FERNALD, M.L.
	*LAXIFLORA	FERNALD, M. L.
	MEDITERRANIA	MACKENZIE, K.K.
	PADDOENSIS	SUKSDORF, W.N.
	*PAUP ERCUL A	FERNALD, M.L.

DATE	TAXON	AUTHOR
1906	PHAEOCEPHALA	PIPER,C.V.
	RHYNCHACHAENIUM	CLARKE, C.B. IN MERRILL, E.D.
	SAXIMONTANA	MACKENZIE, K.K.
1907	*TRISPERMA AGROSTOIDES	KNIGHT, O.W.
1907	BREVISQUAMA	MACKENZIE,K.K. MACKENZIE,K.K.
	CILIARIS	FERNALD, M.L.
	NEOMEXICANA	MACKENZIE, K.K.
	PERGLOBOSA	MACKENZIE, K.K.
	PERLONGA	FERNALD, M.L.
	SIMULATA	MACKENZIE, K.K.
	SUBTRANSVERSA	CLARKE, C.B.
	TUMULICOLA	MACKENZIE,K.K.
1908	ABDITA	BICKNELL, E.P.
	AEQUA	CLARKE, C.B.
	CHIHUAHUAENSIS	MACKENZIE, K. K.
	FELIPENSIS INCOMPERTA	CLARKE,C.B. BICKNELL,E.P.
	PROJECTA	MACKENZIE, K.K.
	PSEUDOJAPONICA	CLARKE, C.B.
	SCABRIUSCULA	MACKENZIE,K.K.
	SCIRPIFORMIS	MACKENZIE, K.K.
	VIOLACEA	CLARKE, C.B.
1909	ABRAMSII	MACKENZIE, K.K.
	*AQUATILIS	KUKENTHAL, G. IN ENGLER, H.G.A.
	*CLADOSTACHYA	KUKENTHAL, G. IN ENGLER, H.G.A.
	*FILIFOLIA	KUKENTHAL, G. IN ENGLER, H.G.A.
	FISSURICOLA	MACKENZIE,K.K.
	FUSCOTINCTA *HINDSII	MACKENZIE, K.K.
	HOLMIANA	KUKENTHAL,G. IN ENGLER,H.G.A. MACKENZIE,K.K.
	*LEMANNIANA	KUKENTHAL, G. IN ENGLER, H.G.A.
	*LENTICULARIS	KUKENTHAL, G. IN ENGLER, H.G.A.
	MACROSPERMA	MACKENZIE, K.K.
	MICROPTERA	MACKENZIE, K.K.
	NUBICOLA	MACKENZIE, K.K.
	≭NUDATA	KUKENTHAL,G. IN ENGLER,H.G.A.
	PERSTRICTA	MACKENZIE,K.K.
	*PINETORUM	KUKENTHAL, G. IN ENGLER, H.G.A.
	SALINAEFORMIS	MACKENZIE, K.K.
	SMALLIANA *STIPATA	MACKENZIE,K.K. KUKENTHAL,G. IN ENGLER,H.G.A.
	*TENUIFLORA	KUKENTHAL, G. IN ENGLER, H.G.A.
1910	ABORIGINUM	JONES, M. E.
2,10	AEST IVAL IFORMIS	MACKENZIE, K.K.
	AGGREGATA	MACKENZIE, K.K.
	ARSENII	KUKENTHAL, G.
	BILTMOREANA	MACKENZIE, K.K.
	*BRUNNEA	KUKENTHAL, G.

DATE	NOXAT	AUTHOR
1910	BUSHII DEBILIFORMIS ELMERI ELRODI FULVESCENS *JAMESONI MERRILLII MESOCHOREA RAMOSII *SCOPARIA	MACKENZIE, K.K. MACKENZIE, K.K. KUKENTHAL, G. JONES, M.E. MACKENZIE, K.K. KUKENTHAL, G. KUKENTHAL, G. MACKENZIE, K.K. KUKENTHAL, G. MACKENZIE, K.K. KUKENTHAL, G. FERNALD, M.L. AND WIEGAND, K.M.
	STANTONENSIS *STIPATA	JONES, M.E. MOHEGAND, K.M.
1911	*HORN SCHUCHIANA PALAWANENSIS PYCNOTHYSOS	FERNALD, M.L. AND WIEGAND, K.M. KUKENTHAL, G. IN ELMER, A.D.E. KUKENTHAL, G.
1912	ATROSQUAMA	MACKENZIE, K.K.
1913	*SCOPARIA BRAINERDII BREVICAULIS	FERNALD, M.L. AND WIEGAND, K.M. MACKENZIE, K.K. MACKENZIE, K.K.
	≭DEWEYANA GEOPHILA MAGNIFOLIA PITYOPHILA	FERNALD, M.L. MACKENZIE, K.K. MACKENZIE, K.K. IN SMALL, J.K. MACKENZIE, K.K.
1914	CRYPTOLEPIS OKLAHOMENSIS	MACKENZIE,K.K. MACKENZIE,K.K.
1915	BULBOSTYLIS CUSICKII EGGLESTONII EGREGIA FESTIVELLA LUNELLIANA MISANDROIDES	MACKENZIE, K.K. FERNALD, M.L.
1916	ONUSTA PIPERI RUGOSPERMA RUSBYI SHELDONII ABRUPTA CONVOLUTA DAVYI GRACILIOR HARFORDII INTEGRA LANCIFRUCTUS LEPORINELLA	MACKENZIE, K.K. MACKENZIE, K.K.
	MARIPOSANA MULTICOSTATA OLYMPICA PACHYCARPA	BAILEY,L.H. MACKENZIE,K.K. MACKENZIE,K.K. MACKENZIE,K.K.

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1916	SUB-BRACTEATA TENERAEFORMIS	MACKENZIE,K.K.	
1917	ALBO-NIGRA	MACKENZIE, K.K. MACKENZIE, K.K.	IN RYDBERG, P.A.
1711	ANGUSTIOR		IN RYDBERG, P.A.
	EPAPILLOSA		IN RYDBERG, P.A.
	INCURVIFORMIS		IN RYDBERG, P.A.
	LEPTOPODA		IN RYDBERG, P.A.
	NELSONII		IN RYDBERG, P.A.
1918	BAMBUSETORUM	MERRILL, E.D.	
	*PAUPERCULA	FERNALD, M.L.	
1919	ARAPAHOENSIS	CLOKEY, I.W.	
	SUBIMPRESSA	CLOKEY, I.W.	
	*TRIBULOIDES	CLOKEY, I.W.	
1920	CHIKUNGANA	BAILEY, L. H.	
	CRANDALLII	GANDOGER, M.	
	KULINGANA	BAILEY, L.H.	
	SUKSDORFII	KUKENTHAL, G.	
	*SUKSDORFII	KUKENTHAL, G.	
1921	*SCOPARIA	FERNALD, M.L.	
1922	APODA	CLOKEY, I.W.	
	CREBRIFLORA DUDLEYI	WIEGAND, K.M. MACKENZIE, K.K.	
	FLACCIFOLIA	MACKENZIE, K.K.	
	FRACTA	MACKENZIE, K.K.	
	HELLERI	MACKENZIE, K.K.	
	MONTEREYENSIS	MACKENZIE, K.K.	
	ORMOSTACHYA	WIEGAND, K.M.	
	PAUCICOSTATA	MACKENZIE, K.K.	
	PAYSONIS	CLOKEY, I.W.	
	STENOPTERA	MACKENZIE, K.K.	
	TRACYI	MACKENZIE,K.K.	
	UNILATERALIS	MACKENZIE, K.K.	
1923	MERRITT-FERNALDII	MACKENZIE, K.K.	
	*NEBRASKENSIS	SUKSDORF, W.N.	7.N. ADDAMC 1
	NEUROPHORA		IN ABRAMS, L.
	SUBORBICULATA	MACKENZIE, K.K.	
1924	VIRIDIOR *HOSTIANA	MACKENZIE, K.K. FERNALD, M.L. AN	
1924	CUBENSIS	KUKENTHAL, G.	NU WIEGANUPROMO
1920	*CUBENSIS	KUKENTHAL, G.	
	EKMANII	KUKENTHAL, G.	
	*LIVIDA	FERNALD, M.L.	
1929	*APERTA	KUKENTHAL, G.	
	*APERTA	KUKENTHAL, G.	
	*EKMANII	KUKENTHAL, G. AN	ID EKMAN, E.L.
	*EURYCARPA	KUKENTHAL, G.	
	*INTERRUPTA	KUKENTHAL, G.	
	*OEDERI	MARIE-VICTORIN,	
	WERDERMANNII	GROSS,R. IN WER	RDERMANN, E.

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1930	LARICINA	MACKENZIE, K. K. EX BRIGHT, J.
	TAHITENSIS	BROWN, F.B.H.
1931	ARCTAEFORMIS	MACKENZIE,K.K.
	AUTUMNALIS CLIVICOLA	MACKENZIE,K.K. FERNALD,M.L. AND WEATHERBY,C.A.
	CUNEATA	OHWI, J.
	FISSA	MACKENZIE, K.K.
	INVOLUCRATELLA	MACKENZIE, K.K.
	MOHRIANA	MACKENZIE, K.K.
	MOLESTA	MACKENZIE, K. K.
	PLATYLEPIS	MACKENZIE, K.K.
	PRAECEPTORIUM	MACKENZIE, K.K.
	PROPOSITA	MACKENZIE, K.K.
	RUTHII TOWNSENDII	MACKENZIE,K.K. MACKENZIE,K.K.
	WIEGANDII	MACKENZIE, K.K.
1932	HYMENODON	OHWI.J.
	RUGATA	OHWI, J.
1933	KURILENSIS	OHWI, J.
	LANGEANA	FERNALD, M.L.
	X PSEUDO-FULVA	FERNALD, M. L.
	X TRICHINA	FERNALD, M.L.
	*VESICARIA X XANTHINA	FERNALD, M.L. FERNALD, M.L.
1934	APODOSTACHYA	OHWI, J.
1754	HATUSIMANA	OHWI, J.
	PHILOCRENA	KRECZETOWICZ, V.I.
	*RUBRO-BRUNNEA	MERRILL, E.D.
1935	ABLATA	BAILEY, L.H.
	ACUTINELLA	MACKENZIE, K.K.
	AZTECICA CAESARIENSIS	MACKENZIE, K.K.
	CONSPECTA	MACKENZIE,K.K. MACKENZIE,K.K.
	GARBERI	FERNALD, M.L.
	*GARBERI	FERNALD, M. L.
	LEIOPHYLLA	MACKENZIE, K.K.
	MISERABILIS	MACKENZIE, K.K.
	PURPURIFERA	MACKENZIE, K. K.
	SAVAIIENSIS	KUKENTHAL,G. MACKENZIE.K.K.
	STELLATA TSOI	MERRILL, E.D. AND CHUN, N.K.
1936	MACKENZIANA	WEATHERBY, C.A.
	OBISPOENSIS	STACEY, J.W.
	*VULPINOIDEA	HERMANN, F.J.
1937	*CRUS-CORVI	FERNALD, M.L.
	CURATORIUM	STACEY, J. W.
	PELOCARPA	HERMANN, F.J.
1938	SONOMENSIS *ARTITECTA	STACEY,J.W. HERMANN,F.J.
1,70	PARTITECTA	TENTHANTY: • J •

DATE	TAXON	AUTHOR
1938	CONSTANCEANA X DEAMII *DIGITALIS EASTWOODIANA EXPLORATORUM	STACEY, J.W. HERMANN, F.J. FERNALD, M.L. STACEY, J.W. NELMES, E.
1939	*LAXIFLORA SARAWAKETENSIS *ANGUSTIOR DANAENSIS	HERMANN, F.J. KUKENTHAL, G. CLAUSEN, R.T. AND WAHL, H.A. STACEY, J.W.
	*INTERIOR KOKRINENSIS MELOZITNENSIS SCHNEIDERI	CLOKEY, I.W. PORSILD, A.E. PORSILD, A.E. NELMES, E.
	SUBNIGRICANS	STACEY, J.W.
1940	BARTLETTII	O'NEILL, H.T.
1941	*DIGITALIS	FERNALD, M. L.
	DUTILLYI *INTERIOR	O'NEILL, H.T. AND DUMAN, M. HERMANN, F.J.
	*PHALAROIDES	GROSS, R.
	*PIRCHINCHENSIS	GROSS, R.
	*PURPUREOVAGINATA	GROSS,R.
	RUGATA	FERNALD, M.L.
	SALTAENSIS	GROSS, R.
1942	*ABSCONDITA	FERNALD, M.L.
	X ABSCONDITIFORMIS	FERNALD, M.L.
	*AMPHIBOLA	FERNALD, M.L.
	BAYARDI *CUMULATA	FERNALD, M.L. FERNALD, M.L.
	*DEBILIS	FERNALD, M.L.
	*INFLATA	FERNALD, M. L.
	*INTUMESCENS	FERNALD, M. L.
	JACOBI-PETERI	HULTEN, O.E.G.
	*LASIOCARPA	FERNALD, M.L.
	*PALL ESCENS	FERNALD, M.L.
	*RICHARDSONII	FERNALD, M.L.
	TERRAE-NOVAE	FERNALD, M.L.
1943	*ATROFUSCA	PORSILD, A. E.
	MORRISSEYI	PORSILD, A. E.
1944	OBOVOIDEA INTERIMUS	CRONQUIST,A. MAGUIRE,B.
1744	RACHILLIS	MAGUIRE, B.
	*VERNACULA	MAGUIRE, B.
1945	ELBERTANA	KELSO, L.
	HAGIANA	KELSO,L.
	*OXYL EP IS	UNDERWOOD, J.K.
1946	*CAMPYLOCARPA	MAGUIRE, B. AND HOLMGREN, A.H.
	*CRINITA	FERNALD, M.L.
1947	ACROPHILA	BLAKE, S.T.
	BREVIS	BLAKE, S.T.

DATE	TAXON	AUTHOR
1947	EREMOSTACHYA HUEHUETECA LAMPROCHLAMYS MELANOPHORA PERILEIA SOPERI STEYERMARKII UNCOMPAHGRE VITIENSIS	BLAKE,S.T. STANDLEY,P.C. AND STEYERMARK,J.A. BLAKE,S.T. BLAKE,S.T. BLAKE,S.T. RAUP,H.M. STANDLEY,P.C. KELSO,L. ST.JOHN,H.
1948 1949	ROANENSIS MURICULATA	HERMANN, F.J. IN MCVAUGH, R.
1950	SPECUICOLA ATRACTODES ERXLEBENIANA KAUAIENSIS PERCOSTATA *PLUVICA QUICHENSIS	HOWELL,J.T. HERMANN,F.J. KELSO,L. KRAUSS,R. HERMANN,F.J. KRAUSS,R. HERMANN,F.J.
1951	*WAHUENSIS CULMENICOLA LARENSIS RORAIMENSIS TACHIRENSIS TAMANA TURUMIQUIRENSIS	KRAUSS,R. STEYERMARK,J.A. STEYERMARK,J.A. STEYERMARK,J.A. STEYERMARK,J.A. STEYERMARK,J.A. STEYERMARK,J.A. STEYERMARK,J.A.
1952	DIVERSISTYLIS STANDLEYANA TETSUOI	ROACH, A.W. STEYERMARK, J.A. OHWI, J.
1953	CUCHUMATANENSIS TOJQUIANENSIS TUNIMANENSIS VENOSIVAGINATA	STANDLEY, P.C. AND STEYERMARK, J.A.
1954	LATEBRACTEATA TOREADORA *WILLDENOWII	WATERFALL, U.T. STEYERMARK, J.A. HERMANN.F.J.
1955	AMPLISQUAMA TRICHOPHYLLA VEXANS	HERMANN, F.J. NELMES, E. HERMANN, F.J.
1956	X DUMANII X EXSALINA LIMNOPHILA X NEOFILIPENDULA X NEOPALEACEA *X SAXENII	LEPAGE,É. LEPAGE,E. HERMANN,F.J. LEPAGE,E. LEPAGE,E. LEPAGE,E.
1957	ATHABASCENSIS EURYSTACHYA INCONDITA X NUBENS *PRATICOLA	HERMANN, F.J. HERMANN, F.J. HERMANN, F.J. LEPAGE, E. HERMANN, F.J.

DATE	TAXON	AUTHOR
1958	JEPSONII	HOWELL, J.T.
1959	SURCULOSA	RAYMOND, M.
	TAMAKII	KOYAMA,T.
	ZIZANIAEFOLIA	RAYMOND, M.
1960	*EGGLESTON!!	HERMANN, F. J.
1961	TOMPKINSI	HOWELL, J.T.
1962	X PATUENSIS	LEPAGE, E.
	*VIRIDULA	LEPAGE, E.
1963	*BIPARTITA	HERMANN, F.J.
1964	AZUAYAE	STEYERMARK, J. A.
	X NEOBIGELOWII	LEPAGE, E.
	PLECTOC ARPA	HERMANN, F.J.
	X QUEBECENSIS	LEPAGE, E.
1965	*FISSA	HERMANN, F.J.
1967	CHIAPENSIS	HERMANN, F.J.
1968	*MICROPTERA	HERMANN, F.J.
1969	OBLANCEOLATA	KOYAMA,T.
1971	GUATEMALENSIS	HERMANN, F.J.

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ANDERSON, J. P. 4871 19 AUG 1938 JACOBI-PETERI ARSENE, G. (FRERE) 3054 16 JUL 1909 ARSENII 1359 01 AUG 1907 CONSPECTA ARSENE, L. (FRERE) 28 JUL 1902 FULVESCENS BAILEY, L. H 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 2376 *CL ADOSTACHYA 2376 **CL ADOSTACHYA 2376 **JAMESONI**							
4871 19 AUG 1938 JACOBI-PETERI ARSENE,G.(FRERE) 3054 16 JUL 1909 ARSENII 1359 01 AUG 1907 CONSPECTA ARSENE,L.(FRERE) 28 JUL 1902 FULVESCENS BAILEY,L.H 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER,C.F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 2376 *SAXIMONTANA BANG,M. 2210 **CLADOSTACHYA 2376 *JAMESONI							
ARSENE,G.(FRERE) 3054 16 JUL 1909 ARSENII 1359 O1 AUG 1907 CONSPECTA ARSENE,L.(FRERE) 28 JUL 1902 BAILEY,L.H. 13 JUN 1917 CHIKUNGANA KULINGANA 161 O1 JUN 1886 *RETROCURVA BAKER,C.F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA NUBICOLA SAXIMONTANA BANG,M. 2210 SAXIMONTANA BANKS,J. AND SOLANDER,D.C.							
3054 16 JUL 1909 ARSENII 1359 01 AUG 1907 CONSPECTA ARSENE, L. (FRERE) 28 JUL 1902 FULVESCENS BAILEY, L. H 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 2376 **CLADOSTACHYA** 2376 **JAMESONI							
1359 01 AUG 1907 CONSPECTA ARSENE, L. (FRERE) 28 JUL 1902 FULVESCENS BAILEY, L. H 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 234 SAXIMONTANA BANG, M. 2210 SAXIMONTANA BANKS, J. AND SOLANDER, D.C.							
ARSENE, L. (FRERE) 28 JUL 1902 FULVESCENS BAILEY, L. H 13 JUN 1917 CHIKUNGANA 18 JUL 1917 KULINGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 2376 **CLADOSTACHYA 2376 **JAMESONI							
BAILEY, L. H. 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 2376 *CL ADOSTACHYA 2376 *JAMESONI							
BAILEY, L. H. 13 JUN 1917 CHIKUNGANA 161 01 JUN 1886 *RETROCURVA BAKER, C. F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 2376 *CL ADOSTACHYA 2376 *JAMESONI BANKS, J. AND SOLANDER, D.C.							
13 JUN 1917 CHIKUNGANA 18 JUL 1917 KULINGANA 161 01 JUN 1886 *RETROCURVA BAKER,C.F. 811 10 MAY 1902 AEQUA 226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNOIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 232 AUG 1899 NUBICOLA 5AXIMONTANA BANG,M. 2210 *CL ADOSTACHYA 2376 *JAMESONI							
161							
BAKER, C.F. 811 10 MAY 1902 226 AUG 1899 230 AUG 1899 232 AUG 1899 232 AUG 1899 *FESTIVA NUBICOLA SAXIMONTANA BANG, M. 2210 2376 **CL ADOSTACHYA *JAMESONI BANKS, J. AND SOLANDER, D.C.							
### 811							
226 AUG 1899 CHALCIOLEPIS 230 AUG 1899 ELYNDIDES 232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 5AXIMONTANA BANG, M. 2210 *CLADOSTACHYA 2376 *JAMESONI BANKS, J. AND SOLANDER, D.C.							
230							
232 AUG 1899 *FESTIVA 232 AUG 1899 NUBICOLA 5AXIMONTANA BANG, M. 2210 *CL ADOSTACHYA 2376 *JAMESONI BANKS, J. AND SOLANDER, D.C.							
232 AUG 1899 NUBICOLA SAXIMONTANA BANG, M. 2210 *CL ADOSTACHYA 2376 *JAMESONI BANKS, J. AND SOLANDER, D.C.							
BANG, M. 2210 *CL ADOSTACHYA 2376 *JAMESON I BANKS, J. AND SOLANDER, D.C.							
BANG, M. 2210 *CL ADOSTACHYA 2376 *JAMESON I BANKS, J. AND SOLANDER, D.C.							
2210 *CL ADOSTACHYA 2376 *JAMESON I BANKS, J. AND SOLANDER, D.C.							
2376 *JAMESONI BANKS, J. AND SOLANDER, D.C.							
BANKS, J. AND SOLANDER, D.C.							
1769 BANKSII							
BARTLETT, H. H.							
11718A 24 FEB 1931 BARTLETTII							
BEAMAN, J. H.							
3880 31 JUL 1960 GUATEMALENSIS							
BEAN, R.S.; HOSAKA, E.Y. AND ST.JOHN, H.							
11228 21 DEC 1931 *WAHUENSIS							
BICKNELL, E.P.							
11 MAY 1904 ABDITA							
20 JUN 1908 INCOMPERTA							
BIGELOW, J.M.							
# 1853-1854 ALBIDA 1853-1854 *BRONGN I ARTI I							
1547 NEOMEXICANA							
BILTMORE HERBARIUM							

NUMBER	DATE COLLECTE	ED TAXON
BILTMORE HER BAR		
262A	28 MAY 1897	*STIPATA
BIOLETTI, F.T.	25 JUN 1893	TIMUM TOOLA
BOLANDER, H.N.	25 JUN 1895	TUMULICOLA
6213	17 JUN 1863	ATHROSTACHYA
4741	01 MAY 1866	CALIFORNICA
6477	1866	CINNAMOMEA
6477	1866	DEBILIFORMIS
50		FETA
3822	APR 1864	GRACILIOR
4700	1866	GYNODYNAMA
5074		HAYDENIANA
4740	1866	LUZULINA
4701	1866 1866	MENDOCINENSIS
2299	1860-1	1867 NUDATA
6198	JUL 1866	PAUCICOSTATA
4746	1866	PHYLLOMANICA
5046	1866	QUADRIFIDA
5046	1866	*QUADRIFIDA
4702	1066	CALTMACEODMIC
***	1860 (1866	CA. SUB-BRACTEATA
5086	1866	WHITNEYI
6198	1866	WHITNEYI
BOOTT, W.	1000	***************************************
	26 JUL 1865	*SCOPARIA
BOURGEAU, E.	20 002 2007	
	 1857-1	859 *LONGIROSTRIS
BRAINERD, E.		
121	19 JUL 1897	BRAINERDII
160	18 JUL 1897	*ECHINATA
111	11 JUL 1897	*FILIFOLIA
	19 JUL 1898	*INTUME SCENS
BRASS, L. J.		
9515	AUG 1938	ACROPHILA
4418	MAY-JUL 19	BREVIS
10255	OCT 1938	EREMOSTACHYA
5323	SEP-NOV 19	LAMPROCHLAMYS
9583	AUG 1938	PERILEIA
BRASS, L.J. AND	MEYER-DREES, E.	
9828	SEP 1938	MELANOPHORA
BREEDLOVE, D.E.		
6714	30 JUL 1964	CHIAPENSIS
BREWER, W. H.		
1650	17 JUN 1863	ATHROSTACHYA
1422	1863	BREWERI
1977	31 JUL 1863	PACHYCARPA
1636	1863	SARTWELLIANA
1969	31 JUL 1863	* SC OP AR I A
1969	31 JUL 1863	SPECIFICA

NUMBER	DATE COLLECTED	TAXON
BREWER, W. H.		
1778	04 JUL 1863	WHITNEYI
BRIGHT, J.	**	
	18 MAY 1923	PURPURIFERA
BRITTON, N. L.	24 44 1005	+ VANTUOCADBA
DOCUMED M	06 JUL 1895	*XANTHOCARPA
BROWN, D. M. 255	02 AUG 1936	ROANENSIS
BUCKLEY,S.B.	02 AUG 1930	KUANENS 13
BOCKEET #3.B.	900	AUSTRO-CAROL INIANA
		BUCKLEYI
***	***	CAROLINIANA
		MISERA
		STYLOFLEXA
BURCHELL, W. J.		
1911		BURCHELL IANA
BURT-DAVY, J.		
3266	25-30 JUN 1897	DAVYI
BUSH, B. F.		
1718	25 MAY 1902	AGGLOMERATA
1718	25 MAY 1902	AGGREGATA
2514	30 APR 1905	BUSHII
1043	18 MAY 1895	FISSA
7020	02 JUN 1913	LUNELLIANA
993	22 MAY 1895	OKLAHOMENSIS
CANBY, W.M.	02 446 1002	MONTANENCIC
350 CAREY 1	03 AUG 1883	MONTANENSIS
CAREY, J.	MAY 1832	CAREYANA
	MAT 1052	PLATYPHYLL A
•	**	SYCHNOCEPHALA
CARY, M.	•	310/MOOEI MAEA
613	11 JUL 1910	ALBO-NIGRA
CHAMISSO, L.A.		
		CIRCINNATA
		NIGRICANS
		PACHYSTACHYA
CHAPMAN, A. W.		
		BALTZELLII
113		CHAPMANI
	1842	*DIGITALIS
	***	MAGNIFOLIA
		*STELLULATA
CHACE		*ST I PATA
CHASE, A.	17 IAN 1025	*BIIDDIID
8283	17 JAN 1925	*PURPUREOVAGINATA
CHEESEMAN, T.F.	JAN 1883	*COMANS
83	JAN 1882	DEVIA
	JAN 1883	PETRIEI
	GAN 2003	

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DATE COLLECTED

TAXON

CHRISTOPHERSEN, E.		
800	24 SEP 1929	SAVAIIENSIS
CHUN, N. K. AND TSO, C. L.		
43680	1932-1933	TSOI
CLAUSEN, R.T. AND WAHL, H.		
2532	06 JUN 1937	*ANGUSTIOR
CLEMENS, J. AND CLEMENS, M		
34297	28 JUL 1933	EXPLORATORUM
5546	MAR 1937	SARAWAKETENSIS
CLEMENTS, F.	1000	ED EN EA
CLOVEY T U	1900	EBENEA
CLOKEY, I.W.	20 111 1010	ADADAHOENCEC
3227	29 JUL 1918	ARAPAHOENSIS
7468 2338	19 JUN 1937 06 AUG 1915	*INTERIOR
		SUBIMPRESSA
2364	07 AUG 1915	*TRIBULOIDES
COLLINS, J.F. AND FERNALD	03-17 AUG 1905	*CADDED!
COLUMN LE . FERNALD M		*GARBERI
COLLINS, J.F.; FERNALD, M.	05-08 AUG 1904	+51 AVA
	05-08 AUG 1904	*FLAVA
COLLINS, Z.		BARRATTII
COOLEY.D.		DARKATILI
74		*ALOPECOIDEA
/ **		COOLEYI
COVILLE, F.V.		COOLETT
	11 SEP 1902	BRACHYPODA
1457	11 SEP 1902	CAMPLYOCARPA
1362	03 SEP 1902	PACHYSTOMA
CRAWE, I.B. AND WOOD, W.A.	03 3EF 1902	PACHTSTOMA
CRAWLY 1808 AND WOOD, WAR.		WOODII
CRAWE, J.B.		W00011
CNAMEYORDS		*OL IGOCARPA
CRONQUIST, A.		OLIOOCAKI A
2872	03 JUL 1941	OBOVOIDEA
CROOM, H.B.	03 002 1711	000 10101
===	1834	ALATA
CURTIS, M.A.	2001	08010
	JUL 1841	AESTIVALIS
CURTISS, A.H.		
	SEP 1882	CREBRIFLORA
6761	15 APR 1901	MOHRIANA
CUSICK, W.C.		
1331	JUL 1886	CUSICKII
2487	28 AUG 1900	GYMNOCLADA
2849	30 JUN 1902	SCABRIUSCULA
1331	JUL 1886	*TERETIUSCULA
DAVIS, E.		
40-40-40		HALSEYANA

NUMBER	DATE COLLECTED	TAXON
DAVIS,E.		
***	1823	HITCHCOCKIANA
		SICCATA
DEAM, C.C.		
54764	05 MAY 1934	*ARTITECTA
10927	05 JUN 1912	LARICINA
6458	25 MAY 1910	*LA XIFLORA
61177	19 MAR 1941	VEXANS
DELAVAY, R.P.		
4829	15 JUL 1889	PTEROLEPTA
DEWEY, C.		
		COLLECTA
- 100 - 100 - 100 · 100		MIRABILIS
	1822	NOVAE-ANGLIAE
		SCHWEINITZII
	20 JUN	TENERA
		TRISPERMA
~ ~		*UMBELLATA
10	18 JUN 1860	VALLICOLA
DOS,L.		
DOLIMMOND T		NIGRO-MARGINATA
DRUMMOND, T.		AMBULTOOLA
437 431	1832	AMPHIBOLA
432	1832	AUROLENSIS
434	102%	CRUS-CORVI
		FRANKLINII
256 420	1832	HEPBURNII MACROKOLEA
420	1032	PETASATA
~~~		PETRICOSA
		PICTA
424	1832	PTYCHOCARPA
727	1032	RETROFLEXA
		TRIANGULARIS
DUMAN, M.		INTANOGEANIS
1506	08 AUG 1938	DUTILLYI
DUTILLY, A. AND LEPAGE, E		00112211
41.3054	12 AUG 1963	X NEOBIGELOWII
39329	19 AUG 1961	X PATUENSIS
41,305	12 AUG 1963	X QUEBECENSIS
39274	16 AUG 1961	*VIRIDULA
DUTILLY, A.; LEPAGE, E. A		VIII 3 0 LII
32793	29 AUG 1954	X EXSALINA
32975	03 SEP 1954	X NEOPALEACEA
32357	14 AUG 1954	*X SAXENII
EASTWOOD, A.		
725A	16 JUL 1914	LE I OPHYLLA
EASTWOOD, A. AND HOWELL,	J. T.	
1101	23 JUN 1933	CURATORIUM
2271	07 MAY 1936	OBISPOENSIS

NUMBER

TAXON

EGGERT, H.				
		08 AUG	1893	EGGERTII
EGGLESTON, W.	W .			
6181		22 AUG		EGGLESTONII
6584		18 APF	R-25 MAY 1911	GEOPHILA
13567		19-20	AUG 1916	MISERABILIS
6605		18 APF	R-25 MAY 1911	PITYOPHILA
3329		30 JUL	-C1 AUG 1916	VIRIDIOR
EKMAN, E.L.				
14506			1922	CUBENSIS
			1925	*CUBENSIS
H1 453		12 AUG	1924	EKMANII
H10662		14 SEF	1928	*EKMANII
ELMER, A.D.E.				
3132		JUN		DUDLEYI
8444		MAR		ELMERI
881		JUI		*LENTICULARIS
2700		JUN		OLYMPICA
13146		MAY		PALAWANENSIS
6983		-= NO/	/ 1904	RHYNCHACHAENIUM
ENGELMANN, G.				
			- 1874	ENGELMANNI
FARGES, R.P.				
				FARGESII
FAURIE, U.				
919		28 JUN	1 1901	MICRANTHA
FAXON, E. AND	FAXON, C.E.			
		23 JUN		AENEA
		06 JUL		CRAWFORDII
		27 MAY	1896	ORMOSTACHYA
FENDLER , A.				
878			1847	FENDLERIANA
FERNALD, M.L.				
264		04 JUL		*CRINITA
		28 JUN		*GLAREOSA
		06 JUL		*INTERIOR
146		06 J.UL		*LAXIFLORA
		03 JUL		MERRITT-FERNALDII
		05 JUN		*MIRABILIS
		30 JUN		ORONENSIS
1464		08 JUL	. 1909	*SCOPARIA
FERNALD, M.L.	AND BISSELL			
20311		16 AUG	3 1920	*CUMULATA
FERNALD, M. L.	AND LONG, B.			
12012		08 JU		*ABSCONDITA
12969		13 JUN		X ABSCONDITIFORMIS
8143		08 JUN		*CRINITA
12016			1 1940	*DEBILIS
11791		08 MAY	1940	*DIGITALIS

DATE COLLECTED

NUMB ER	DATE COLLECTED	TAXON
FERNALD, M.L. AND LONG, B.		
7767	08 APR 1938	*DIGITALIS
11787	07 MAY 1940	RUGATA
20296	14 JUL 1920	*SCOPARIA
1455	27 AUG 1929	X XANTHINA
FERNALD, M.L. AND WIEGAND		A ABITTITION
2897	16 AUG 1910	*HORNSCHUCHIANA
2897	16 AUG 1910	*HOSTIANA
4918	12-13 JUL 1911	*PALLESCENS
4258	16 AUG 1910	X PSEUDO-FULVA
4796	28 AUG 1911	*SCOPARIA
2776	21 JUL 1910	WIEGANDII
FERNALD, M. L.; LONG, B. AN		WILCOMIUII
1374	20 JUL 1929	LANGEANA
1449	19 AUG 1929	X NEOFILIPENDULA
1474	31 JUL 1929	*VESICARIA
FERNALD, M. L.; LONG, B. AN		#VESICARIA
5677 * *	22 JUN 1936	BAYARDI
5677	22-23 JUN 1936	*CRUS-CORVI
FERNALD, M.L.; WEATHERBY,		*CKU3-CUKVI
2411	05 JUL 1931	CLIVICOLA
FERNALD, M.L.; WIEGAND, K.		CLIVICOLA
		#1 TMTD4
27673	20 JUL 1925	*LIVIDA
FERNALD, M.L.; WIEGAND, K.		
27657	31 JUL 1925	TERRAE-NOVAE
FORD, C.	10000	
	1883?	SCAPOSA
FOWLER . J.	1.070	*******
	1872	*ADUSTA
	1871	*FOENEA
		*MILIARIS
	1872	PROJECTA
	JUL 1870	*STRAMINEA
FRANK, J. C.		
55	1835	FLACCIDULA
	1835	STEUDELII
FRETZ,C.D.		
	1884	*GRISEA
FUNSTON, F.		
139	30 JUL 1893	PHYSOCHLAENA
GARBER, A.P.		
	C9 JUN 1869	*AUREA
***	09 JUN 1869	GARBERI
GEYER, C.A.		
332	₩ 40 40	GEYERI
GRANT,G.B.		
	01 MAY 1902	FLACCIFOLIA
GRIFFITH, W.		
78(KEW 6074)		GRIFFITHII
96 (KEW 6094)	<b>*</b> = *	SANGUINEA

NUMBER

TAXON

HAENKE,T.		
HACINE, 1.		ANTHOXANTHERA
		PRESLII
HALE, D.		, KESEII
97		IGNOTA
HALL,É.		101014
580	1871	*DEWEYANA
606	1871	HALLIANA
583	01 AUG 1871	*LEPORINA
605	1871	OREGONENSIS
583	01 AUG 1871	PHAEOCEPHALA
	1871	VICARIA
	1872	*WILLDENOVII
HALL, E. AND HARBOUR, J.P.		
591	1862	*BONPLANDII
617	1862	HALLII
591	1862	ILLOTA
587	1862	VIOLACEA
HALL, H. M.		
2483	JUL-AUG 1901	JACINTOENSIS
9781	25 JUL 1914	TENERAEFORMIS
HALL, H. M. AND BABCOCK, H.		
5472	JUL 1904	LANCIFRUCTUS
HALL, H. M. AND CHANDLER, H	•A• 01-02 AUG 1903	
4716	01-02 AUG 1903	LEPORINELLA
HARPER, R.M. 2109	09 APR 1904	HARPERI
2159	26 APR 1904	SMALLIANA
HARTMAN, C.V.	20 AFR 1904	SMALLIANA
620	12 APR 1891	CHIHUAHUAENSIS
HASSE, H.E.	12 AFR 1091	CHINOAHOALNSIS
	JUL 1894	HASSEI
	01 MAY 1886	*ROSEA
HAY, G.U.	01 /INT 2000	
84	24 JUL 1900	*CANESCENS
HAYDEN, F. V.		
	1853	*AR I STATA
580		*DOUGLASII
21	1853+1854	HAYDENII
		LAEVI-CONICA
		MEEKII
<b>~ ~ ~</b>		NEBRASKENSIS
	20 JUN 1860	RAYNOLDSII
HELLER, A. A.		
10820	07 JUN 1913	ABRUPTA
9429	11 AUG 1908	FISSURICOLA
9975	23 JUL 1910	HELLERI
9841	16 JUL 1909	INTEGRA
5797	01 JUL 1902	LACUNARUM

DATE COLLECTED

NUMBER	DATE COLLECTED	TAXON
HELLER, A.A.		
10052	20 MAY 1910	LEPTOPODA
7187	17 AUG 1903	*LUZULAEFOLIA
9067	21 JUL 1908	MICROPTERA
7187	17 AUG 1903	PSEUDOJAPONICA
HENDERSON, L.F.	17 400 1703	13200004101104
13	1883	ACUTINELLA
5583	25 JUL 1925	EASTWOODIANA
2203	JUL 1884	INOPS
1482	31 JUL 1886-20 AUG 1	
HENRY, A.	31 00E 1000 20 A00 1	1 1113 1
7860	1885-1888	ICHANGENSIS
5467	1000 1000	LANCIFOLIA
4266		*LONGIC RURIS
10839		PRAINII
HENRY, J.K.		( NAINII
9152	04 JUN 1915	ARCTAEFORMIS
HERMANN, F. J.	C4 30N 1913	ANCTALT ORBITS
13498	28 AUG 1956	ATHABASCENSIS
17059	15 AUG 1961	*BIPARTITA
6147	05 JUL 1934	X DEAMII
13529	28 AUG 1956 15 AUG 1956	EURYSTACHYA
13347		INCONDITA
7985	13 JUL 1936	*INTERIOR
12252	21 AUG 1955	LIMNOPHILA
5983	15 AUG 1933	PELOCARPA
18120	21 AUG 1962	PLECTOCARPA
13453	26 AUG 1956	*PRATICOLA
6408	14 AUG 1934	*VULPINOIDEA
HOHEN ACK ER, R.F.		
943	1851	MERCARENSIS
HOLLISTER, N.		
14	C5 AUG 1911	ATRO SQUAMA
HOSAKA, E.Y.		
594	04 JUL 1932	*PLUVICA
HOUGHTON, D.		
	13 JUL 1832	HOUGHTONIANA
HOWE, E.C.		
	30 MAY 1887	ROSAEOIDES
HOWELL, J. T.		
14546	11 AUG 1938	DANAENSIS
24609	23 JUN 1948	SPECUICOLA
14519	11 AUG 1938	SUBNIGRICANS
35333	06 JUN 1960	TOMPKINSI
HOWELL, J.T. AND STACEY	', J.W.	
13042	<b>0</b> 6 JUN 193 <b>7</b>	SONOMENSIS
HOWELL, T.J.		
	MAY 1880	ACCEDENS
935	09 MAY 1885	ACUT INA
2994	MAY 1886	BREVICAULIS

NUMBER	DATE COLLECTED	TAXON
HOMELL T I		
HOWELL, T.J.	27 MAY 1885	*MARCIDA
7.3 1	MAY 1880	SPRETA
	MAY 1880	*STYLOSA
INGALLS,T.	177 2000	3112034
		TURGESCENS
JAMES, EDWIN		
40 40 40	<b>~~~</b>	JAMESII
JEPSON, W. L.		
4477	20 JUL 1911	JE PS ON I I
4476	20 JUL 1911	MARIPOSANA
JOHNSON, W. M.		
594	14 AUG 1967	*MICROPTERA
JOHNSTON, I.M.		
1505	31 JUL 1917	STENOPTERA
JONES, M.E.		
	12 JUL 1899	ABORIGINUM
834	28 AUG 1878	CRANDALLII
	08 JUL 1909	ELRODI
5345	01 JUN 1874	EPAPILLOSA
	22 JUL 1881	JONESII
KELLOGG, A.		
	03 AUG	HETERONEURA
		KELLOGGII
	10 JUL 1870	NERVINA
		SUBFUSCA
KELLOGG, A. AND HARFORD,		+5567744
1073		*FESTIVA
1073	1868-1869	HARFORDII
1069	1868-1869	*H000II
1069	1868-1869	*H00011
KELSO,L. 4967	C1 AUG 1945	ELBERTANA
6362	24 JUL 1948	ERXLEBENIANA
6058	03 JUL 1947	UNCOMPAHGRE
KELSO, L. AND KELSO, E.H.		ONCOMP ANORE
525	08 AUG 1936	HAGIANA
KENNEDY, G. G.	00 A00 1730	MAGIANA
	11 JUN 1899	*VESTITA
KINASHI, N.		
	JUL 1909	CUNEATA
KOYAMA.T.		
	23 NOV 1958	TAMAKII
LEAVENWORTH, M.C.		
	1846	FLACCOSPERMA
	1845	LEAVENWORTHII
LEAVENWORTH, M.C. AND HA	LE,D.	
683		HALEI
LECHLER, W.		
1136	OCT 1852	INCISO-DENTATA

NUMBER	DATE COLLECTED	TAXON
LEIBERG, J.B.		
335	26 JUN 1894	PHAEOLEPIS
125	10 JUL 1895	PRIONPHYLLA
2558	10 JUL 1896	VAGANS
LEMMON, J.G.		
	1875	LEMMONI
2	21 JUN 1882	ULTRA
LEPAGE, E.		
32078	30 JUL 1954	X DUMANII
33131	27 JUL 1955	X NUBENS
LIPSKY, V. I.		
2732	19 JUL 1899	PHILOCRENA
LITVINOV,D.I.		
153	1897	*ST ENOPHYLL A
LONG, B.	35 444 3000	0.50.0.50.0
	15 JUN 1920	CAESARIENSIS
LYALL, DAVID	10/1	A 6147 A
MACROIDE 4 E AND DAVE	1861	*ACUTA
MACBRIDE, J.F. AND PAYS	13 AUG 1916	
- · · -	15 AUG 1916	PROPOSITA
MACDANIELS, L.H. 1542	15 MAY 1927	TAUTTENCTO
MACKENZIE, K.K.	15 MAY 1927	TAHITENSIS
2676	23 JUN 1907	AESTIVALIFORMIS
2088	10 JUN 1907	CONVOLUTA
4645	26 JUN 1910	CRYPTOLEPIS
4042	30 MAY 1897	MOLESTA
167	AUG 1901	PERGLOBOSA
9871	MAY 1911	RUGOSPERMA
MACOUN, J. M.	THE TOTAL	KOOOSI EKIIA
33728	12 JUL 1901	*SCIRPOIDEA
MACOUN, JOHN	12 002 1/01	SOIN SIDER
13401	26 JUL 1887	ABLATA
52	14 JUN 1879	ASSINIBOINENSIS
6	01 AUG 1882	*CRAWFORDII
1665	12 AUG 1872	ELEOCHARIS
	31 JUL 1891	INCURVIFORMIS
53877	14 AUG 1902	MICROCHAETA
22	04 JUL 1899	*MIRABILIS
	31 MAY 1887	PIPERI
***	31 MAY 1887	*PRATENSIS
26624	24 JUN 1901	*STRAMINEA
	04 JUL 1879	XERANTICA
MAGUIRE, B.		
16098	05 AUG 1938	INTERIMUS
MAGUIRE, B. AND HOLMGRE	•	
21947	16 JUL 1943	*CAMPYLOCARPA
MAGUIRE, B. AND MAGUIRE		
14668	16 AUG 1936	RACHILLIS

TAXON

# NUMBER DATE COLLECTED

MAGUIRE, B.; HOBSON, D.A.	AND	MAG	UIRE,R.R.	
14013				*VERNACULA
MANDON, G.				
1429		-		MANDONIANA
MARIE-VICTORIN, (FRERE)		41181	1017	#844858644A
4021 MARIE-VICTORIN, (FRERE) A			1917	*PAUPERCULA
			1926	*INFLATA
			· ·	THI CATA
2348	28	JUL	1899	SCIRPIFORMIS
2348 MEAD, S. B.				
₩ ₩		-		ILLINOENSIS
		-		MEADII
MEDOTAL 5 0		•		*RICHARDSONII
MERRILL, E. D.	1.2	ALIC	1017	DAMBUSETORUM
10985	12	AUG	1917	#BUINNEY
44.22		MAY	1000	MEDDILLI
542		ADD	1010	PYCHOTHYCOC
4730		OCT.	-NOV 1005	SUBTRANSVERSA
10985 6505 6623 543 4730 MERTENS, C.H.		001	NOV 1903	3001 KANSVERSA
		-		LEIOCARPA
MOHR, C.				
MOHR, C.	26	APR	1897 1931	*STIPATA
MOORE, J. A. AND STEYERMARI	K,J	. A .		
3625	25	JUL	1931	MURICULATA
MULLER, C. H.				
3520	27	SEP	1939	PERCOSTATA
MULLER, C.H. AND MULLER, M.		41181	102/	MACKENIT T AND
892 MUTIS, J.C.	28	JUN	1934	MACKENZIANA
			1760-1808	*PIRCHINCHENSIS
NELSON, A.			1700-1000	*FIRCHINGHENSIS
7124	11	JUN	1900	BREVISQUAMA
3275	02	JUL	1897	FESTIVELLA
3275 7316	29	JUN	1900 1897 1900	SIMULATA
NELSON, A. AND MACBRIDE, J.				
1533	01	AUG	1911	APODA
NELSON, A. AND NELSON, E.				
5264	30	AUG	1898	NELSONII
NUTTALL,T.				
17		•		NUTTALLII
OHWI,J.			1022	400000746444
4182			1933	APODOSTACHYA
329			1933	HATUSIMANA
813 29			1931 1931	KURILENSIS RUGATA
OLNEY, S. T.	04	MAY	1731	NUGATA
ULINE 1930 10	01	.1(1)	1867	HORMATHODES
	0.1	995	2001	HORMATTIONES

NUMBER	DATE COLLECTED	TAXON
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PAINE, J. A.		
		*VAGINATA
PALMER, E. 546	JUN 1890	*NUDA TA
PARISH, S.B.	- 30N 1090	THODATA
2485	03 JUL 1892	AUSTROMONTANA
3609	JUN 1995	MULTICOSTATA
4144 PARRY,C.C.	04-13 APR 1896	VITREA
	<del></del> 1850	BARBARAE
PARRY, C. C. AND LEMMON, J.	G.	
396	1876	ALMA
PAYSON, E.B. AND PAYSON, L		DAYCONIC
PEASE, A.S. AND LONG, B.	06 AUG 1920	PAYSONIS
20519	09 JUL 1920	*LASIOCARPA
PECK, C. H.		
	JUN 1894	*ROSEA
5	JUN 1893 JUN 1894	*ROSEA
	JUN 1894	*STIPATA *TORTA
PECK, M. F.	3011 2072	TONTA
13	13 AUG 1917	PRAECEPTORIUM
PETELOT, P. A.		
5325	JUL 1930	TRICHOPHYLLA
PETRIE, D.		KALOIDES
	JAN 1880	LONGICULMIS
PITTIER, H. AND TONDUZ, A.		
3376	19 JAN 1891	DURANDII
3381 PORSILD, A.E.	19 JAN 1891	*LEMANNIANA
173	26 AUG 1937	MORRISSEYI
PORSILD, A.E. AND PORSILD		1101111200211
5120	02 AUG 1928	*ATROFUSCA
711	23 JUN-05 JUL 1926	KOKR INENSIS
713 PORTER,T.C.	23 JUN-05 JUL 1926	MELOZITNENSIS
PURIER, I. C.		*DEBILIS
	26-29 JUN 1871	HALLII
	28 AUG 1871	PORTERI
PREISS, L.		00516611
1825 1861	JUL 1839	PREISSII PREISSII
PRINGLE, C. G.	<b>30L 1</b> 039	REISSII
4275	03 OCT 1892	AUTUMNALIS
4839	19 AUG 1894	AZTECICA
10039	26 AUG 1905	CILIARIS
4838	25 AUG 1894	FELIPENSIS

PRINGLE, C-G.	NUMB ER	DATE COLLECTED	TAXON
### 4839	PRINGLE, C.G.		
### 4839		23 AUG 1881	FRACTA
3126	4839	19 AUG 1894	
### ### ### ### ### ### ### ### ### ##			
### 4842			
8863 2630 2630 2630 2630 305 3UN 1889 2630 3801 3801 3801 3801 3801 3801 3801 38			
2630 05 JUN 1889 PERSTRICTA 4685 08 JUN 1894 *PINETORUM 3801 04 AUG 1891 PRINGLET 19 AUG 1881 *SCIRPOIDEA 7452 24 JUN 1897 SEATONIANA  PYRON, J.H. AND MCVAUGH, R. 2951 15 MAY 1938 AMPLISQUAMA RAUP, H.M. AND SOPER, J.H. 9534 18 JUL 1939 SOPERI RAY, J.D.: WOOD, C.E.; SMITH, A.C. AND EATON, R.J. 10750 26 APR 1961 *FISSA  RICH, W.P 05 JUN 1894 *TENERA  RICHARDSON, J 1838-1842 LACINIATA  RICHARDSON, J 1847 BACKANA BACKII RICHARDSON, J 1 DURIFOLIA FESTIVA HOOKERANA PARRYANA PODDCARPA RICHARDSONII  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROSE, J.N. 9019 1905 STELLATA  RUSBY, H.H. 859 1883 RUSBYI			
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3801			
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2951			SEATONIANA
RAMOS,M. BUR. SCI. 1434 AUG 1906 RAMOSII  RAUP,H. M. AND SOPER,J.H. 9534 18 JUL 1939 SOPERI  RAY,J.D.; WOOD,C.E.; SMITH,A.C. AND EATON,R.J. 10750 26 APR 1961 *FISSA  RICH,W.P 05 JUN 1894 *TENERA  RICH,WILLIAM WILKES EXPED. 1241 1838-1842 LACINIATA  RICHARDSON,J ARCTICA BACKANA BACKII BACKANA BACKII DURIFOLIA FESTIVA HOOKERANA PARYANA PARYANA PODOCARPA RICHARDSONII  ROACH,A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROCK,J.F. 9017 OCT 1909 KAUAIENSIS  ROSE,J.N. 2357 16 AUG 1897 MADRENSIS  ROSE,J.N. 9019 1905 STELLATA  ROUSSEAU,J. 24989 27 JUL 1926 *OEDERI  RUSBY,H.H. 859 1883 RUSBYI  RUTH,A. 360 12 APR 1913 BULBOSTYLIS  BULBOSTYLIS  BULBOSTYLIS  BULBOSTYLIS	PYRON, J. H. AND MCVAUGH, R	•	
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RAUP, H. M. AND SOPER, J. H.  9534  RAY, J. D.: WOOD, C.E.; SMITH, A.C. AND EATON, R.J.  10750  26 APR 1961  *FISSA  RICH, W.P.   05 JUN 1894  *TENERA  RICH, WILLIAM  WILKES EXPED. 1241   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   42498  AND ROSE, J.S.  9019   70T 1909  TAUL 1926  *OEDERI  RUSBY, M. H.  859   859  RUSBY, M. H.  859  RUSBYI  RUSBYTLIS  BULBOSTYLIS  ONUSTA	RAMOS, M.		
RAUP, H. M. AND SOPER, J. H.  9534  RAY, J. D.: WOOD, C.E.; SMITH, A.C. AND EATON, R.J.  10750  26 APR 1961  *FISSA  RICH, W.P.   05 JUN 1894  *TENERA  RICH, WILLIAM  WILKES EXPED. 1241   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   417   42498  AND ROSE, J.S.  9019   70T 1909  TAUL 1926  *OEDERI  RUSBY, M. H.  859   859  RUSBY, M. H.  859  RUSBYI  RUSBYTLIS  BULBOSTYLIS  ONUSTA	BUR. SCI. 1434	AUG 1906	RAMOSII
9534 18 JUL 1939 SOPERI  RAY,J.D.; WOOD,C.E.; SMITH,A.C. AND EATON,R.J. 10750 26 APR 1961 *FISSA  RICH,W.P 05 JUN 1894 *TENERA  RICH,WILLIAM WILKES EXPED. 1241 1838-1842 LACINIATA  RICHARDSON,J BACKANA 417 BACKANA HACKII HOOKERANA HOOKERANA HOOKERANA HOOKERANA HOOKERANA HOOKERANA HOOKERANA RICHARDSONII  ROACH,A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROCK,J.F. 9017 OCT 1909 KAUAIENSIS  ROSE,J.N. 2357 BAUAIENSIS  ROSE,J.N. 2357 BAUAIENSIS  ROSE,J.N. PAINTER,J.H. AND ROSE,J.S. 9019 STELLATA  ROUSSEAU,J. 24989 27 JUL 1926 *OEDERI  RUSBY,H.H. 859 1883 RUSBYI  RUTH,A. 360 12 APR 1913 BULBOSTYLIS  ONUSTA			
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RICH, W.P.  05 JUN 1894 *TENERA  RICH, WILLIAM WILKES EXPED. 1241 1838-1842 LACINIATA  RICHARDSON, J.  ARCTICA BACKANA BACKANA BACKII DURIFOLIA FESTIVA HOOKERANA PODDCARPA RICHARDSONII  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROCK, J.F. 9017 OCT 1909 KAUAIENSIS  ROSE, J.N. 2357 16 AUG 1897 MADRENSIS  ROSE, J.N.; PAINTER, J.H. AND ROSE, J.S. 9019 1905 STELLATA  RUSSY, H.H. 859 1883 RUSBYI  RUTH, A. 360 12 APR 1913 BULBOSTYLIS  BULBOSTYLIS  BULBOSTYLIS  BULBOSTYLIS			*ETCCA
RICH, WILLIAM WILKES EXPED. 1241 1838-1842  RICHARDSON, J.  BACKANA BACKII		20 APR 1901	*F133A
RICH, WILLIAM WILKES EXPED. 1241 1838-1842  RICHARDSON, J.  ARCTICA BACKANA BACKII BACKII DURIFOLIA FESTIVA FESTIVA HOOKERANA PARRYANA PODOCARPA RICHARDSONII  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROSE, J.N. 2357 16 AUG 1897 MADRENSIS  ROSE, J.N.; PAINTER, J.H. AND ROSE, J.S. 9019 1905 STELLATA  ROUSSEAU, J. 24989 27 JUL 1926 *OEDERI  RUSBY, H.H. 859 1883 RUSBYI  RUTH, A. 859 1883 BULBOSTYLIS  RUSBY, H.H. 859 1883 BULBOSTYLIS	KICH, W.P.	05 4111 2007	ATENED A
WILKES EXPED. 1241 1838-1842  RICHARDSON, J.  ARCTICA  417 BACKANA  BACKII  DURIFOLIA  FESTIVA  HOOKERANA  PARRYANA  PARRYANA  PODOCARPA  RICHARDSONII  ROACH, A.W.  202 10 JUN 1949 DIVERSISTYLIS  ROCK, J.F.  9017 OCT 1909 KAUAIENSIS  ROSE, J.N.: 2357 16 AUG 1897 MADRENSIS  ROSE, J.N.: PAINTER, J.H. AND ROSE, J.S.  9019 1905 STELLATA  ROUSSEAU, J.  24989 27 JUL 1926 *OEDERI  RUSBY, H.H.  859 1883 RUSBYI  RUTH, A.  360 12 APR 1913 BULBOSTYLIS  ONUSTA		U5 JUN 1894	* I ENEKA
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## BACKANA ## BACKII ## BACKII ## DURIFOLIA ## DURIFOLIA ## FESTIVA ## HOOKERANA ## PARRYANA ## PODOC ARPA ## RICHARDSONII  ## ROACH, A.W. ## 202	RICHARDSON, J.		
BACKII DURIFOLIA FESTIVA HOOKERANA PARRYANA PODDC ARPA RICHARDSONII  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROCK, J.F. 9017 OCT 1909 KAUAIENSIS  ROSE, J.N. 2357 16 AUG 1897 ROSE, J.N.; PAINTER, J.H. AND ROSE, J.S. 9019 ROUSSEAU, J. 24989 27 JUL 1926 RUSBY, H.H. 859 1883 RUSBYI  RUTH, A. 360 12 APR 1913 BULBOSTYLIS  BULBOSTYLIS  BULBOSTYLIS  ONUSTA			ARCTICA
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FESTIVA HOOKERANA PARRYANA PARRYANA PODDC ARPA RICHARDSONII  ROACH, A.W. 202 10 JUN 1949 DIVERSISTYLIS  ROCK, J.F. 9017 OCT 1909 KAUAIENSIS  ROSE, J.N. 2357 16 AUG 1897 MADRENSIS  ROSE, J.N.; PAINTER, J.H. AND ROSE, J.S. 9019 1905 STELLATA  ROUSSEAU, J. 24989 27 JUL 1926 *OEDERI  RUSBY, H.H. 859 1883 RUSBYI  RUTH, A. 360 12 APR 1913 BULBOSTYLIS 0NUSTA			BACKII
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9019 1905 STELLATA  ROUSSEAU, J.	2357	16 AUG 1897	MADRENSIS
9019 1905 STELLATA  ROUSSEAU, J.	ROSE, J.N.; PAINTER, J.H.	AND ROSE, J.S.	
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JUL 1900 KUTHII			
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SARTWELLII

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NUMBER	DATE COLLECTED	TAXON
RYDBERG, P.A.		
2339	07 AUG 1895	IDAHOA
SANDBERG, J.H.		
933	20 AUG 1892	*HINDSII
SANDBERG, J.H. AN	ND LEIBERG, J.B.	
194	09 JUN 1893	*NEBRASKENSIS
773	18 AUG 1893	NEUROPHORA
SARTWELL, H.P.	23	
	<b>*</b>	ALOPECOIDEA
56	400	AQUATILIS
56	===	*AQUATILIS
70		*CEPHALOPHORA
	10/0	· · -
108	1848	COMMUNIS
78	<b></b>	*CRINITA
	<b>**</b>	FORMOSA
36	•••	INTERIOR

1404 -- -- 1866-1874 *NUTANS 2059 -- -- 1866-1874 PLANATA 1413 -- -- 1866-1874 PODDGYNA SCHAFFNER, J.G.

221 -- -- 1877 FUSCOLUTEA 546 -- -- 1877 POTOSINA 546 -- -- 1877 SCHAFFNERI SCHNEIDER, C.

2738 06 AUG 1914 SCHNEIDERI SCHNEIDER, R.A.

954 25 JUL 1938 *EGGLESTONII SCHWEINITZ, L.D.

COSTATA
GRACILLIMA

SCOULER, J.

APERTA
COLUMBIANA
296
SEKIMOTO, H.

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45450 29 APR 1945 ATRACTODES 45144 07 FEB 1945 QUICHENSIS SHELDON, E.P. 8854 09 SEP 1897 SHELDONII NUMBER

SVENSON, H.K.

10469

TAXON

CONJUNCTA

*OXYLEPIS

	5 032220 125	TAXON
SMITH, C.P.		
1055	24 JUL 1905	MONTEREYENSIS
SMITH, J.D. AND 659	JUN 1885	DONNELL-SMITHII
SMITH, S.J. AND		#U.T.A. I. D.C.N.O.U.T. T
4872 ST.JOHN,H.	06 APR 1949	*WILLDENOWII
18330	18 AUG 1937	VITIENSIS
ST.JOHN, H. AND 1C801	16-17 JUL 1914	MISANDROIDES
STEELE.E.S.		MISANDROIDES
	1896	ANGUSTIOR
	23 MAY 1898	MEDITERRANIA
	1900	MESOCHOREA
STEYERMARK, J.A.	1896 23 MAY 1898 1900	
53105 48347 62605	15 JUN 1943	AZUAYAE CUCHUMATANENSIS
48347	07 JUL 1942	
62605	06 MAY 1945	CULMENICOLA
49000	18 JUL 1942	HUEHUETECA
55470	11 FEB 1944	LARENSIS
5887C	28 SEP 1944	RORAIMENSIS
48542	14 JUL 1942	STEYERMARKII
57367	15 JUL 1944	INCUTKENSIS
57401	15 JUL 1944	TAMANA
50150	06 AUG 1942	TOJQUIANENSIS
53095 48334	15 JUN 1943	TOREADORA TUNIMANENSIS
62705	07 JUL 1942 10 MAY 1945	TURUMI QUIRENSIS
48554	10 MAY 1945 14 JUL 1942	VENOSI VAGINATA
SUK SDORF, W. N.	14 JUL 1942	VENUSI VAGINATA
12347		*APERTA
12348	15 SEP-23 OCT 1927	
12359	23 OCT 1927	*APERTA
6864		CYNICTANCCANA
5181	16 AUG 1909 15 JUL 1905	EGREGIA
1284	26 JUN 1886	EURYCARPA
11551	21 AUG 1924	*FUR YCAR PA
12333	22 AUG-05 SEP 1927	*INTERRUPTA
10249	22 JUN 1919	*NEBRASKENSIS
816	02 JUN 1885	OXYCARPA
1296	13 AUG 1897	PADDOENS IS
1315	JUL 1883	SUBORBICULATA
7383	27 AUG 1912	SUKSDORFII
5259	21 AUG-20 SEP 1905	*SUKSDORFII
SULLIVANT, W.S.		
	<b>**</b>	*AL AT A
		CON HINCT A

12 JUL 1939

DATE COLLECTED

TAXON

*AMPHIBOLA

NUMBER

NUMBER	DATE COLLECTED	TAXON
TAAM, Y. W.		
502	1-16 APR 1938	SURCULOSA
TAK, T.W. AND CHOW, W.		
3202	20 NOV 1926	OBLANCEOLATA
THURBER, G. 652		*GAYANA
	JUN 1850	THURBERI
TORREY, J.	2011 2030	
	03 AUG 1839	HETEROSTACHYA
TOWNSEND, C. H. T. AND E		
157	21 JUL 1899	TOWNSENDII
TRACY, J. P. 4547	04 JUL 1914	TOACVI
3783	21 JUL 1912	TRACYI UNILATERALIS
TRACY, S. M.	21 000 1712	ONICATERACIS
17	23 MAY 1888	*STRAMINEA
TSAI, H.T.		
62809	1934	ZIZANIAEFOLIA
TSUI,T.M.	WAR ARR 1022	***************************************
74 TUCKERMAN, E.	MAR-APR 1932	*RUBRO-BRUNNEA
TUCKERMAN # E •		ARGYRANTHA
	JUN 1864	GL AUCODEA
***		*SCOPARIA
	9999	*SCOPARIA
UNDERWOOD, L.M.		
158	29 JAN 1903	UNDERWOODI I
VAHL,J.		PRATENSIS
VASEY,G.		PRATENSIS
		*HIRSUTA
VENTURI,S.		
6491	15 FEB 1927	*PHALAROIDES
8650	1929	SALTAENSIS
VREELAND, F. K.	10 440 1001	1101 447 4414
1121 WARE, R. A.; ROLLINS, S.	19 AUG 1901	HOLMIANA
5066	05 JUL 1906	*TRISPERMA
WATERFALL, U.T.	09 000 1700	TRISTERIA
11380	19 APR 1953	LATEBRACTEATA
WATSON, S.		
1231 A	AUG 1869	*CANESCENS
1246	MAY 1868	WATSONI
WERDERMANN, E. 1687	MAR 1925	WERDERMANNII
WHEELER, C.F.	MAN 1760	WENDERMANNII
	28 JUN 1890	*TENUIFLORA

WIEGAND, K.M. AND THOMAS, C.C. 1915 15 JUN 1914

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WILKES EXPLOR.	EVDED	
WITKE? EXLEGE.	1838-1842	HEBETATA
	1838-1842	*MICROGLOCHIN
	1838-1842	OLIGANTHA
	1838-1842	WILKESII
WILLIAMS, E.F.	2030 2012	WIENCOIL
	AUG 1900	*VESICARIA
WILLIAMS, E.F.;	CHURCHILL, J.R. AND FERNALD, M.L.	
	16 JUL 1900	KATAHDINENSIS
WILLIAMS, E.F.;	COLLINS, J.F. AND FERNALD, M.L.	
	12-15 JUL 1905	*DEWEYANA
110	19 JUL 1902	X TRICHINA
WILLIAMS, L.O.		
13178	06 JUL 1947	STANDLEYANA
WILLIAMS, R.S.		
	18 JUN 1899	BONANZENSIS
	07 JUN 1893	CONCINNOIDES
	11 AUG 1894	STANTONENSIS
	12 JUN 1899	WILLIAMŞII
	18 JUN 1899	YUKONENSIS
WILLIAMS, T.A.		
2951	19 AUG 1897	PLATYLEPIS
WOOD, W. A.		
	•••	RETROCURVA
WOOTON, E.O.		
	28 JUL 1900	AGROSTOIDES
WRIGHT, C.	1141 1055	CONFEDERATION 4
	JUN 1855	CONFERTIFLORA
	1053 105/	MICANS
	1853-1856	NA NA
400	1853-1856	PAPULOSA
	<b>44 4</b>	PARCIFLORA PICTA
1561	1850	WRIGHTII
WRIGHT, S.H.	1000	WKIGHIII
MUTOIII 6 2 4 LI		*STRICTA
		XEROCARPA
		ALKOCAKFA

# GEOGRAPHIC INDEX

COUNTRY	STATE	TAXON
AFGHANISTAN		GRIFFITHII
ARGENTINA	JUJUY SALTA TIERRA DEL FUEGO (TER	SANGUINEA *PHALAROIDES SALTAENSIS BANKSII
AUSTRALIA	WESTERN AUSTRALIA	PREISSII PREISSII
BOLIVIA	WESTERN AUSTRALIA	*CLADOSTACHYA *JAMESONI MANDONIANA
BRAZIL BRITISH HONDURAS CANADA	RIO DE JANEIRO CAYO	*PURPUREOVAGINATA BARTLETTII PARRYANA PODOCARPA RICHARDSONII
	ALBERTA ALBERTA ALBERTA ALBERTA	ATHABASCENSIS ATROSQUAMA EURYSTACHYA INCONDITA
	ALBERTA ALBERTA ALBERTA	INCURVIFORMIS *PRATICOLA SCIRPIFORMIS
	BRITISH COLUMBIA BRÎTISH COLUMBIA BRITISH COLUMBIA BRITISH COLUMBIA	ABLATA ARCTAEFORMIS PIPERI *PRATENSIS
	BRITISH COLUMBIA MANITOBA MANITOBA	*SCIRPOIDEA ASSINIBOINENSIS DUTILLYI
	MANITOBA	*LONGIROSTRIS
	NEW BRUNSWICK NEW BRUNSWICK	*ADUSTA *CANESCENS
	NEW BRUNSWICK	*FOENEA
	NEW BRUNSWICK	*MILIARIS
	NEW BRUNSWICK	*MIRABILIS
	NEW BRUNSWICK	PROJECTA
	NEW BRUNSWICK	*STRAMINEA
	NEWFOUNDLAND NEWFOUNDLAND	*HORNSCHUCHIANA *HOSTIANA
	NEW FOUNDL AND	LANGEANA
	NEWFOUNDLAND	*LIVIDA
	NEWFOUNDLAND	MISANDROIDES
	NEWFOUNDLAND	MORRISSEYI
	NEWFOUNDLAND	X NEOFILIPENDULA
	NEWFOUNDL AND	*PALLESCENS
	NEWFOUNDL AND	X PSEUDO-FULVA
	NEWFOUNDLAND	*SCOPARIA
	NEWFOUNDLAND NEWFOUNDLAND	TERRAE→NOVAE *VESICARIA

**KUL INGANA** 

BAMBUSETORUM

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KIANGSI

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#### TAXON

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**NEWFOUNDLAND** WIEGANDII **NEWFOUNDL AND** X XANTHINA NORTHWEST TERRITORIES NORTHWEST TERRITORIES *ATROFUSCA SOPERI NOVA SCOTIA *CUMULATA NOVA SCOTIA *LASIOCARPA NOVA SCOTIA *SCOPARIA ONTARIO *STRAMINEA QUEBEC CLIVICOLA QUEBEC *CRAWFORDII QUEBEC *DEWEYANA QUEBEC X DUMANII QUEBEC X EXSALINA QUEBEC *FLAVA QUEBEC *GARBERI QUEBEC *GLAREOSA QUEBEC * INFLATA QUEBEC X NEOBIGELOWII QUEBEC X NEOPALEACEA QUEBEC X NUBENS QUEBEC *OEDERI QUEBEC X PATUENSIS QUEBEC *PAUPERCULA QUEBEC X QUEBECENSIS QUEBEC *X SAXENII QUEBEC *VIRIDULA **SASKATCHEWAN** ARCTICA SASKATCHEWAN BACKANA SASKATCHEWAN BACKII SASKATCHEWAN DURIFOLIA SASKATCHEWAN ELEOCHARIS SASKATCHEWAN HOOKERANA SASKATCHEWAN **XERANTICA** YUKON TERRITORY BONANZENSIS YUKON TERRITORY LEIOPHYLLA YUKON TERRITORY MICROCHAETA YUKON TERRITORY WILLIAMSII YUKON TERRITORY YUKONENSIS INCISO-DENTATA LLANQUIHUE WERDERMANNII *MICROGLOCHIN MAGALLANES MAGALLANES OLIGANTHA HUPEH **ICHANGENSIS** HUPEH LANCIFOLIA *LONGICRURIS HUPEH HUPEH AND HONAN CHIKUNGANA

CHILE

CHINA

COUNTRY	STATE	TAXON
CHINA	KWANGTUNG KWANGTUNG	*RUBRO-BRUNNEA SCAPOSA
	KWANGTUNG	SURCULOSA
	KWANGTUNG	TSOI
	SZECHWAN	FARGESII
	YUNNAN	PRAINII
	YUNNAN	PTEROLEPTA
	YUNNAN	SCHNEIDERI
	YUNNAN	ZIZANIAEFOLIA
COLOMBIA		*PIRCHINCHENSIS
COSTA RICA		DURANDI I
		*LEMANNIANA
CUBA	ORIENTE	CUBENSIS
ECUADOR	AZUAY	AZUAYAE
	AZUAY	TOREADORA
FIJI		VITIENSIS
FRENCH POLYNESIA		TAHITENSIS
GREENLAND		PRATENSIS
GUATEMALA	ALTA VERAPAZ	DONNELL-SMITHII
	HUEHUETENANGO	CUCHUMATANENSIS
	HUEHUETENANGO	GUATEMALENSIS
	HUEHUETENANGO	HUEHUETECA
	HUEHUETENANGO	STEYERMARKII
	HUEHUETENANGO	TOJQUIANENSIS
	HUEHUETENANGO	TUNIMANENSIS
	HUEHUETENANGO	VENOSIVAGINATA
	JALAPA	STANDLEYANA
114 7 7 7	QUICHE	QUICHENSIS
HAITI		*CUBENSIS
	CUECT	*EKMANII
TAIRTA	OUEST	EKMANII
INDIA	WEAT NEW AUTHER	MERCARENSIS
INDONESIA	WEST NEW GUINEA	ACROPHILA
	WEST NEW GUINEA	EREMOSTACHYA
	WEST NEW GUINEA	MELANOPHOR A
JAMAICA	WEST NEW GUINEA	PERILEIA
JAPAN		UNDERWOODI I
JAPAN		HYMENODON MICANS
	ACMORT (PRECECTURE)	RUGATA
	AOMORI (PREFECTURE)	CUNEATA CONFERTIFLORA
	HOKKAIDO (PREFECTURE) HOKKAIDO (PREFECTURE)	NANA
	HOKKAIDO (PREFECTURE)	PAPULOSA
	HOKKAIDO (PREFECTURE)	PARCIFLORA
	HOKKAIDO (PREFECTURE)	PICTA
	KANAGAWA (PREFECTURE)	MACROGLOSSA
	KANAGAWA (PREFECTURE)	*NUTANS
	KANAGAWA (PREFECTURE)	PLANATA
	NAMAGAMA (FALILUTURE)	FLANAIA

ELMERI

RAMOSII

MERRILLII SUBTRANSVERSA

**PYCNOTHYSOS** 

**PALAWANENSIS** 

COUNTRY STATE TAXON JAPAN TOKYO (PREFECTURE) PODOGYNA KOREA MICRANTHA MALAYSIA SABAH (TERRITORY) EXPLORATORUM MEXICO CHIAPAS ATRACTODES CHIAPAS CHIAPENSIS CHIHUAHUA CHIHUAHUAENSIS CHIHUAHUA **PERCOSTATA** TOWNSENDII CHIHUAHUA DURANGO MADRENSIS HIDAL GO CILIARIS HIDALGO PERLONGA HIDALGO **SEATONIANA** HIDALGO STELLATA **AUTUMNALIS** MEXICO MICHOACAN **ARSENII** NUEVO LEON *EGGLESTONII NUEVO LEON MACKENZIANA NUEVO LEON PERSTRICTA OAXACA AZTECICA OAXACA **FELIPENSIS** OAXACA **FUSCOTINCTA** MACROSPERMA OAXACA OAXACA OAXACANA OAXACA *PINETORUM PUEBLA CONSPECTA SAN LUIS POTOSI **FUSCOLUTEA** SAN LUIS POTOSI INVOLUCRATELLA SAN LUIS POTOSI POTOSINA SAN LUIS POTOSI PRINGLEI SAN LUIS POTOSI SCHAFFNERI SONORA ***GAYANA** SONORA THURBERI NEW ZEALAND CANTERBURY (DISTRICT) *COMANS CANTERBURY (DISTRICT) PETRIEI NELSON (DISTRICT) DEVIA OTAGO (DISTRICT) KALOIDES OTAGO (DISTRICT) LONGICULMIS PAPUA AND NEW GUINEA NORTH-EAST NEW GUINEA SARAWAKETENSIS PAPUA (TERRITORY) BREVIS PAPUA (TERRITORY) LAMPROCHLAMYS PERU LIMA HEBETATA **PHILIPPINES** BATAAN RHYNCHACHAENIUM BENGUET *BRUNNE A

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TAXON COUNTRY STATE

RYUKYU ISLANDS

SOUTH AFRICA ST. PIERRE AND MIQUELON SWITZERLAND TAIWAN

USA

OKINAWA (PREFECTURE)

OKINAWA (PREFECTURE)

VALAIS (CANTON)

**FUKIEN** 

TAMAKII **TETSUOI** 

BURCHELLIANA **FULVESCENS** 

*FLAVA

**APODOSTACHYA HATUS IMANA** 

*CANESCENS COLUMBIANA FRANKLINII GEYERI **JAMESII** 

NUTTALLII PETASATA PETRICOSA *UMBELLATA

*STIPATA

ANTHOXANTHERA CIRCINNATA JACOBI-PETERI KOKRINENSIS LEIOCARPA **MELOZITNENSIS NIGRICANS** PACHYSTACHYA PHYSOCHLAENA PRESLII

CURATORIUM *NUDATA RUSBYI SPECUICOLA ULTRA BUSHII *ROSEA

SCOULERI **ABRAMSII** ABRUPTA **AEQUA** ALBIDA ALMA

ATHROSTACHYA ATHROSTACHYA AUSTROMONTANA BARBARAE BRAINERCII BREWERI

*BRONGNIARTII CALIFORNICA CINNAMOMEA

ALABAMA ALASKA ARIZONA ARIZONA ARIZONA **ARIZONA** ARIZONA **ARKANSAS** ARKANSAS BRITISH COLUMBIA CALIFORNIA CALIFORNIA

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USA

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DAVYI DEBILIFORMIS **CUDLEY I *ECHINATA** *FESTIVA FETA *FILIFOLIA FLACCIFOLIA FRACTA GRACILIOR GYNODYNAMA HARFORDII HASSEI HAYDENIANA HETERONEURA *HOODII *HOODII **INTEGRA JACINTOENSIS JEPSONII JONESII** KELLOGGII LACINIATA **LACUNARUM** LANCIFRUCTUS LEMMONI LEPORINELLA *LUZULAEFOL I A **LUZULINA** MARIPOSANA MENDOCINENSIS MONTEREYENSIS MULTICOSTATA NERVINA NUDATA OBISPOENSIS PACHYCARPA PAUCICOSTATA PHYLLOMANICA PRAEGRACILIS **PSEUDOJAPONICA** QUADRIFIDA *QUADRIFIDA SALINAEFORMIS SARTWELLIANA *SCIRPOIDEA *SCOPARIA SONOMENSIS

STATE

TAXON

USA

CALIFORNIA SPECIFICA CALIFORNIA STENOPTERA CALIFCRNIA SUB-BRACTEATA CALIFORNIA SUBFUSCA CALIFCRNIA SUBNIGRICANS CALIFORNIA **TENERAEFORMIS** CALIFCRNIA TOMPKINSI CALIFCRNIA TRACYI CALIFORNIA TUMULICOLA CALIFCRNIA UNILATERALIS CALIFCRNIA VITREA WHITNEYI CALIFORNIA CALIFORNIA WHITNEYI CALIFCRNIA WHITNEYI CALIFORNIA WILKESII COLORADO **ARAPAHOENSIS** COLORADO *BIPARTITA COLORADO *BONPLANDII COLORADO CHALCIOLEPIS **COLOR ADO** CRANDALLII COLORADO **EBENEA** COLORADO **EGGLESTONII** COLORADO ELBERTANA COLORADO ELYNOIDES COLORADO ENGELMANNI COLORADO ERXLEBENIANA COLORADO *FESTIVA COLORADO HAGIANA COLORADO HALLII COLORADO **HEPBURNII** COLORADO ILLOTA *MICROPTERA COLORADO COLORADO NUBICOLA COLORADO PERGLOBOSA COLORADO SAXIMONTANA COLORADO UNCOMPAHGRE VIOLACEA COL OR ADO DISTRICT OF COLUMBIA ANGUSTIOR DISTRICT OF COLUMBIA MEDITERRANIA DISTRICT OF COLUMBIA MESOCHOREA FLORIDA BALTZELLII FLORIDA CHAPMANI FLORIDA CREBRIFLORA FLORIDA *DIGITALIS FLORIDA *FISSA FLORIDA FLACCOSPERMA MAGNIFOLIA FLORIDA FLORIDA MOHRI ANA FLORIDA *STELLULATA

*SCOPARIA

X TRICHINA

COUNTRY	STATE	TAXON
USA	FLORIDA	*STIPATA
	FLORIDA	VEXANS
	GEORGIA	AMPLISQUAMA
	GEORGIA	HARPERI
	GEORGIA	SMALLIANA
	GEORGIA	*WILLDENOWII
	HAWAII	KAUAIENSIS
	HAWAI I	*PLUVICA
	HAWAII	*WAHUENSIS
	IDAHO	ABORIGINUM
	IDAHO	APODA
	IDAHO	HALLII
	IDAHO	*HINDSII
	IDAHO	IDAHOA
	IDAHO	OBOVOIDEA
	IDAHO	PR IONPHYLL A
	IDAHO	PROPOSITA
	IDAHO	RAYNOLDSII
	ILLINOIS	*HIRSUTA
	ILLINOIS	ILLINOENSIS
	ILLINCIS	MEADII
	ILLINOIS	*RICHARDSONII
	ILLINOIS	SUBIMPRESSA
	ILLINOIS	*TRIBULOIDES
	INDIANA	*ARTITECTA
	INDIANA	X DEAMII
	INDIANA	LARICINA
	INDIANA	*LAXIFLORA
	KANSAS	MOLESTA
	LOUISIANA	AMPHI BOL A
	LOUISIANA	AUROLENSIS
	LOUISIANA	CRUS-CORVI
	LOUISIANA	HALEI
	LOUISIANA	IGNOTA
	LOUISIANA	LEAVENWORTHII
	LOUISIANA	MACROKOLEA
	LOUISIANA	PICTA
	LOUISIANA	PTYCHOCARPA
	LOUISIANA	TURGESCENS
	MAINE	*CRINITA
	MAINE	*INTERIOR
	MAINE	KATAHDINENSIS
	MAINE	*LAXIFLORA
	MAINE	MERRITT-FERNALDII
	MAINE	ORONENSIS
	MAINE	*PAUPERCULA
	MAINE	PORTERI

MAINE MAINE

STATE

TAXON

USA

MAINE MAINE MASSACHUSETTS MASSACHUSETTS **MASSACHUSETTS** MASSACHUSETTS MASSACHUSETTS MASSACHUSETTS **MASSACHUSETTS MASSACHUSETTS** MASSACHUSETTS MASSACHUSETTS MASSACHUSETTS MASSACHUSETTS **MASSACHUSETTS** MASSACHUSETTS MASSACHUSETTS **MASSACHUSETTS** MICHIGAN MICHIGAN MICHIGAN MICHIGAN MICHIGAN MICHIGAN MICHIGAN MICHIGAN MINNE SOTA MISSISSIPPI MISSOURI MISSOURI MISSOURI MISSOURI MONTANA MONTANA MONTANA MONTANA MONTANA MONTANA NEBRASKA **NEBRASKA NEBRASKA** NEBRASKA NEBRASKA NEVADA NEVADA NEVADA NEVADA NEVADA NEW HAMPSHIRE

*TRISPERMA *VESICARIA ARGYRANTHA COLLECTA GLAUCODEA HALSEYANA HITCHCOCKIANA **INCOMPERTA** MIRABILIS NOVAE-ANGLIAE SCHWEINITZII *SCOPARIA *SCOPARIA SICCATA **TENERA** *TENERA TRISPERMA *VESTITA *ALOPECOIDEA COOLEYI HETEROSTACHYA *INTERIOR PRATREA *RETROCURVA *TENUIFLORA *VULPINOIDEA HOUGHTONIANA *STRAMINEA **AGGLOMERATA** AGGREGATA EGGERTII LUNELLIANA CONCINNOIDES ELRODI HOLMIANA MONTANENSIS PLECTOCARPA STANTONENS IS *ARISTATA *DOUGLASII LAEVI-CONICA MEEKII NEBRASKENSIS FISSURICOLA HELLERI *INTERIOR MICROPTERA WATSONI AENEA

#### STATE

#### TAXON

USA

NEW HAMPSHIRE CRAWFORDII NEW HAMPSHIRE *MIRABILIS NEW HAMPSHIRE ORMOSTACHYA NEW HAMPSHIRE *SCOPARIA **NEW JERSEY AESTIVALIFORMIS NEW JERSEY** BARRATTII NEW JERSEY CAESARIENSIS CONVOLUTA NEW JERSEY **NEW JERSEY** CRISTATA NEW JERSEY CRYPTOLEPIS NEW JERSEY RUGOSPERMA NEW MEXICO AGROSTOTOES NEW MEXICO FENDLERIANA NEW MEXICO GEOPHILA NEW MEXICO NEOMEXICANA NEW MEXICO PITYOPHILA **NEW YORK** ABDITA NEW YORK ALOPECOIDEA **NEW YORK** *AMPHIBOLA NEW YORK AQUATILIS NEW YORK *AQUATILIS NEW YORK CAREYANA NEW YORK *CEPHALOPHORA **NEW YORK** COMMUNIS NEW YORK *CR INITA **NEW YORK FORMOSA** NEW YORK INTERIOR NEW YORK ***OLIGOCARPA** NEW YORK PLATYPHYLLA NEW YORK RETROCURVA **NEW YORK** ROSAEOIDES NEW YORK *ROSEA NEW YORK *ROSEA **NEW YORK** SARTWELLII NEW YORK SCABRIOR NEW YORK *STERILIS NEW YORK *STIPATA NEW YORK *STRICTA NEW YORK SYCHNOCEPHALA **NEW YORK** *TENTACULATA **NEW YORK** *TORTA **NEW YORK *VAGINATA NEW YORK** MOODII NEW YORK *XANTHOCARPA **NEW YORK** XEROCARPA NORTH CAROLINA **AESTIVALIS** NORTH CAROLINA ALATA NORTH CAROLINA BILTMOREANA NORTH CAROLINA BUCKLEYI

STATE

TAXON

USA

NORTH CAROLINA MISERA NORTH CAROLINA NIGRO-MARGINATA NORTH CAROLINA RUTHII NORTH CAROLINA *STIPATA NORTH CAROLINA STYLOFLEXA NORTHWEST TERRITORIES FESTIVA OHIO *ALATA OHIO CONJUNCTA OHIO FLACCIDULA OHIO STEUDELII OKLAHOMA FISSA OKLAHOMA LATEBRACTEATA OKLAHOMA OKLAHOMENSIS OREGON **ACCEDENS** OREGON ***ACUTA** OREGON **ACUTINA** OREGON ACUTINELLA OREGON BRACHYPODA OREGON BREVICAULIS CAMPLYOCARPA OREGON OREGON CUSICKII OREGON *DEWEYANA OREGON DIVERSISTYLIS OREGON EASTWOODIANA OREGON GYMNOCLADA OREGON HALLIANA OREGON INOPS OREGON *LEPORINA OREGON LEPTOPODA OREGON *MARCIDA OREGON OREGONENSIS OREGON PACHYSTOMA OREGON PANSA OREGON PHAEOCEPHALA OREGON PHAEOLEPIS OREGON SHELDONII OREGON **SPRETA** OREGON ***STYLOSA** OREGON *TERET IUSCULA OREGON VAGANS OREGON VICARIA PENNSYLVANIA ***ANGUSTIOR** PENNSYLVANIA *AUREA COSTATA **PENNSYLVANIA** PENNSYLVANIA *DEBILIS PENNSYLVANIA GARBERI PENNSYLVANIA GRACILLIMA PENNSYLVANIA *GRISEA RHODE ISLAND HORMATHODES

STATE

TAXON

USA

SOUTH CAROLINA SOUTH CAROLINA SOUTH DAKOTA **TENNESSEE TENNESSEE TENNESSEE TEXAS** TEXAS **TEXAS TEXAS TEXAS TEXAS** TEXAS UTAH UTAH UTAH UTAH UTAH UTAH UTAH VERMONT VIRGINIA VIRGINIA VIRGINIA VIRGINIA VIRGINIA VIRGINIA VIRGINIA VIRGINIA VIRGINIA WASHINGTON WASHINGTON WA SHINGTON WASHINGTON WASHINGTON

AUSTRO-CAROLINIANA CAROLINIANA HAYDENII *OXYLEPIS **PURPURIFERA** ROANENSIS BULBOSTYLIS MURICULATA ONUSTA RETROFLEXA TRIANGULARIS *WILLDENOVII WRIGHTII *CAMPYLOCARPA *CANESCENS **EPAPILLOSA INTERIMUS** PELOCARPA RACHILLIS *VERNACULA *INTUMESCENS *ABSCONDITA X ABSCONDITIFORMIS BAYARDI *CRINITA *CRUS-CORVI *DEBILIS *DIGITALIS *DIGITALIS RUGATA APERTA *APERTA *APERTA *APERTA CONSTANCEANA EGREGIA **EURYCARPA** *EURYCARPA *INTERRUPTA *LENTICULARIS MISERABILIS *NEBRA SKENS IS *NEBRASKENS IS NEUROPHORA OLYMPICA OXYCARPA **PADDOENSIS** PRAECEPTORIUM SCABRIUSCULA

COUNTRY	STATE	TAXON
USA	WASHINGTON	SUBORBICULATA
	WASHINGTON	SUKSDORFII
	WASHINGTON	*SUKSDORFII
	WASHINGTON	VIRIDIOR
	WYOMING	ALBO-NIGRA
	WYOMING	BREVISQUAMA
	WYOMING	FESTIVELLA
	WYOMING	LIMNOPHILA
	WYOMING	NELSONI I
	WYOMING	PAYSONI S
	WYOMING	PLATYLEPIS
	WYOMING	SIMULATA
	WYOMING	VALLICOLA
USSR	RUSSIAN SFSR	KURILENSIS
	TADZHIKISTAN	PHILOCRENA
	TURKESTAN	*STENOPHYLLA
VENEZUELA	BOLIVAR	RORAIMENSIS
	LARA	LARENSIS
	SUCRE	CULMENICOLA
	SUCRE	TURUMIQUIRENSIS
	TACHIRA	TACHIRENSIS
	TACHIRA	TAMANA
VIET-NAM, NORTH	TONKIN	TRICHOPHYLLA

SAVAIIENSIS

WESTERN SAMOA

#### HERBARIUM INDEX

SHEET NO. KIND OF TYPE

TAXON

#### A (ARNOLD ARBORETUM, CAMBRIDGE, MASSACHUSETTS)

ISOTYPE
ISOTYPE
BREVIS
ISOTYPE
EREMOSTACHYA
ISOTYPE
LAMPROCHLAMYS
ISOTYPE
MELANOPHORA
MERCARENSIS
ISOTYPE
PERILEIA
PERILEIA

ISOTYPE RUBRO-BRUNNEA VAR ELINEOLATA

ISOTYPE SARAWAKETENSIS
HOLOTYPE SURCULOSA

ISOTYPE TAHITENSIS HOLOTYPE ZIZANIAEFOLIA

### CAS (CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO)

242617 ISOTYPE ABORIGINUM 497554 **ISOTYPE** ALMA ALOPECOIDEA 553879 ISOTYPE VAR SPARSI-SPICATA 242962 ISOTYPE VAR UMBROSA APERTA 242960 SYNTYPE APERTA VAR VIRIDANS 242961 SYNTYPE **APERTA** VAR VIRIDANS 554019 ISOTYPE VAR SUBSTRICTA AQUATILIS 102030 ISOTYPE **ARAPAHOENSIS** 430881 I SOTYPE BIPARTITA VAR AUSTROMONTANA TYPE COLLECTION 383776 CALIFORNICA 334353 ISOTYPE CAMPYLOCARPA SSP AFFINIS **ISOTYPE** CHAPMANI 553918 232050 ISOTYPE CILIARIS 445943 ISOTYPE CILIARIS TYPE FRAGMENT 553874 CINNAMOMEA 553913 SYNTYPE COMMUNIS 383550 SYNTYPE CONJUNCTA 242987 HOLOTYPE CONSTANCEANA 553883 TYPE COLLECTION CRINITA VAR MINOR 204973 SYNTYPE CURATORIUM SYNTYPE 204974 CURATORIUM 259875 HOLOTYPE DANAENSIS 259874 **I SOTYPE** DANAENSIS 336835 **I SOTYPE** VAR ASYMMETRICA DIGITALIS 372834 ISOTYPE DIVERSISTYLIS 351155 ISOTYPE **DURANDII** 130386 HOLOTYPE EASTWOODIANA 242957 SYNTYPE EURYCARPA 246772 TYPE COLLECTION **EURYCARPA** VAR ATTENUATA EURYSTACHYA 401490 ISOTYPE 234898 ISOTYPE FISSURICOLA 102307 ISOTYPE FORMOSA

# CAS (CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO)

383156	ISOTYPE	FORMOSA		
103033	ISOTYPE	GRACILIOR		
383986	ISOTYPE	GYNODYNAMA		
328017	ISOTYPE	HAGIANA		
103098	SYNTYPE	HOODII	VAR	NERVOSA
103098	SYNTYPE	HOODII		NEUROCARPA
553902	TYPE COLLECTION	IGNOTA		
404489	ISOTYPE	INCONDITA		
203910	ISOTYPE	INOPS		
348506	ISOTYPE	INTERIMUS		
553999	ISOTYPE	INTERIOR		
272528	ISOTYPE	INTERIOR	VAR	CHARLESTONENSIS
272529	ISOTYPE	INTERIOR		CHARLESTONENSIS
242959	TYPE COLLECTION	INTERRUPTA		DISTENTA
477664	ISOTYPE	JACOBI-PETERI	V A A I	DISTERNA
384438	ISOTYPE	LATEBRACTEATA		
	ISOTYPE			
102481		LEIOPHYLLA	V 4 D	CIMBLEY
264341	SYNTYPE	LEMANNIANA	VAK	SIMPLEX
186427	ISOTYPE	LEPTOPODA	V/ A D	CTRORIL ANTHA
136	ISOTYPE	LUZULAEFOLIA		STROBILANTHA
231121	ISOTYPE	LUZULAEFOLIA	VAR	STROBILANTHA
384084	ISDTYPE	LUZULINA		
264346	ISOTYPE	MACKENZIANA		
553885	ISOTYPE	MEADII		
553875	TYPE FRAGMENT	MENDOCINENSIS		
234896	ISOTYPE	MICROPTERA		
194659	ISOTYPE	MURICUL AT A		
235733	HOLOTYPE	OBISPOENSIS		
237824	ISOTYPE	OBISPOENSIS		
237908	ISOTYPE	OBISPOENSIS		
351152	ISOTYPE	ONUSTA		
239452	ISOTYPE	PELOCARPA		
369422	I SOTYPE	PERCOSTATA		
155657	ISOTYPE	PERLONGA		
193005	ISOTYPE	PERLONGA		
383889	ISOTYPE	PITYOPHILA		
416360	ISOTYPE	PLECTOCARPA		
105004	TYPE COLLECTION	PRATENSIS		
404488	ISOTYPE	PRATICOLA	VΔR	SUBCORIACEA
102638	ISOTYPE	PROPOSITA	VAI	JOBOONIACEA
	ISOTYPE	RACHILLIS		
336836	ISOTYPE	RUGATA		
383801	TYPE COLLECTION	SALINAEFORMIS		
383407		SARTWELLII		
	TYPE COLLECTION	SARTWELLII		
553975	TYPE COLLECTION	_		
553877	ISOTYPE	SCABRIOR		
445940	ISOTYPE	SEATONIANA		
246086	HOLOTYPE	SONOMENSIS		

## CAS (CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO)

246636	ISOTYPE	SONOMENSIS		
232289	SYNTYPE	SPECIFICA		
342553	HOLOTYPE	SPECUICOLA		
342552	ISOTYPE	SPECUICOLA		
162423	ISOTYPE	SUBIMPRESSA		
259816	HOLOTYPE	SUBNIGRICANS		
152864	ISOTYPE	SUKSDORFII		
243333	ISOTYPE	SUKSDORFII		
553943	TYPE COLLECTION	TENTACULATA	VAR	ALTIOR
428953	HOLOTYPE	TOMPKINSI		
429306	ISOTYPE	TOMPKINSI		
351161	ISOTYPE	TOWNSENDII		
348507	ISOTYPE	VERNACULA	VAR	HOBSONII

# DS (DUDLEY HERBARIUM, STANFORD UNIVERSITY, STANFORD, CALIFORNIA)

149709	I SOTYPE	ABORIGI NUM		
55317	ISOTYPE	ABRAMSII		
64125	ISOTYPE	ABRUPTA		
109019	ISOTYPE	ARAPAHOENS IS		
489410	HOLOTYPE	AUSTROMONTANA		
49734	TYPE COLLECTION	CALIFORNICA		
269649	ISOTYPE	CONSTANCEANA		
145619	HOLOTYPE	DUDLEYI		
629609	ISOTYPE	DUDL EY I		
144009	ISOTYPE	EASTWOODIANA		
284598	ISOTYPE	EGREGIA		
149706	ISOTYPE	ELRODI		
145620	HOLOTYPE	GRACILIOR		
49500	ISOTYPE	GYNODYNAMA		
490408	ISOTYPE	GYNODYNAMA		
278190	ISOTYPE	INTERIOR	VAR	CHARLESTONENSIS
78003	HOLOTYPE	JACINTOENSIS		
490443	ISOTYPE	LEPORINELLA		
13923	ISOTYPE	LEPTOPODA		
76794	ISOTYPE	LUZULINA		
54832	ISOTYPE	MENDOCINENSIS		
489409	HOLOTYPE	MULTICOSTATA		
171453	ISOTYPE	NEBRASKENSIS		ERUCAEFORMIS
	ISOTYPE	NUDATA	VAR	FIRMIOR
270930	ISOTYPE	OBISPOENSIS		
490462	SYNTYPE	PANSA		
49738	TYPE COLLECTION	PAUCICOSTATA		
55002	SYNTYPE	QUADRIFIDA		
	TYPE COLLECTION	SALINAEFORMIS		
490735	ISOTYPE	SCABRIUSCULA	1	
258275	ISOTYPE	SONOMENSIS	,	

### DS (DUDLEY HERBARIUM, STANFORD UNIVERSITY, STANFORD, CALIFORNIA)

374718	ISOTYPE	SONOMENSIS			
337970	ISOTYPE	SPECUICOLA			
83850	ISOTYPE	STENOPTERA			
171455	ISOTYPE	SUKSDORFII			
269641	ISOTYPE	SUKSDORFII			
269625	SYNTYPE	SUKSDORFII	VAR	OVALIS	
63991	ISOTYPE	ULTRA			
64032	TSOTVE	HITDA			

# F (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO, ILLINOIS)

186491	ISOTYPE		ABRAMSII		
206585	TYPE MATERIAL		ACUTINA		
32699	ISOTYPE		ALOPECOIDEA		
32700	ISOTYPE		ALOPECOIDEA		
56916	ISOTYPE		ALOPECOIDEA		
349624	ISOTYPE		ALOPECOIDEA		
373673	ISOTYPE		ALOPECOIDEA		
373679	ISOTYPE		ALOPECOIDEA		
1464064	TYPE MATERIAL		APODOSTACHYA		
264169	ISOTYPE		AUTUMNALIS		
1266184	TYPE MATERIAL		AZUAYAE		
999642	TYPE MATERIAL		BARTLETTII		
314869	I SOTYPE		BONPLANDII	VAR	MINOR
456934	ISOTYPE		BONPLANDI	VAR	MINOR
1620435	ISOTYPE		CHIAPENSIS		
49642	ISOTYPE		CHIHUAHUAENSIS		
202021	ISOTYPE		CILIARIS		
26304	TYPE MATERIAL		CREBRIFLORA		
1128952	HOLOTYPE		CUCHUMATANENSIS		
1266170	HOLOTYPE		CULMENICOLA		
1406416	TYPE MATERIAL		CUNEATA		
751055	ISOTYPE	X	DEAMII		
455703	TYPE COLLECTION		DEWEYANA		SPARSIFLORA
1429766	TYPE COLLECTION		DEWEYANA		SPARSIFLORA
122779	TYPE MATERIAL		FESTIVA	VAR	DECUMBENS
314892	SYNTYPE		HALLII		
456958	SYNTYPE		HALLII		
176870	ISOTYPE		HARPERI		
1411493	TYPE MATERIAL		HATUSIMANA		
283119	TYPE MATERIAL		HELLERI		
1128957	HOLOTYPE		HUEHUETECA		
1463659	TYPE MATERIAL		HYMENODON		
314869	ISOTYPE		ILLOTA		
456934	ISOTYPE		ILLOTA		
1076930	ISOTYPE		INTERIOR	VAR	CHARLESTONENSIS
263394	TYPE COLLECTION		INVOLUCRATELLA		

# F (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO, ILLINOIS)

1406403 129242 1566419 1481645 55470 267758 455706 1425899 206587 866418 455736 96129 211365 223512 1471489 309086 1785706 1425899 755322 105551 1607711 215918 1263854 1489429 1463953 30885 210109 464432 907841 1252385 1129096 813737 1263858 1129086 1266183 1128966 1266150	TYPE MATERIAL SYNTYPE SYNTYPE ISOTYPE HOLOTYPE ISOTYPE TYPE COLLECTION TYPE COLLECTION TYPE COLLECTION ISOTYPE SYNTYPE TYPE MATERIAL TYPE MATERIAL TYPE MATERIAL TYPE MATERIAL TYPE MATERIAL TYPE COLLECTION SYNTYPE ISOTYPE TYPE MATERIAL TYPE MATERIAL TYPE COLLECTION HOLOTYPE HOLOTYPE HOLOTYPE TYPE COLLECTION HOLOTYPE TYPE COLLECTION HOLOTYPE TYPE MATERIAL	KURILENSIS LACUNARUM LACUNARUM LANGEANA LARENSIS LAXIFLORA LEPORINA MEPORINA MARCIDA OBISPOENSIS OREGONENSIS OXYCARPA OXYCARPA PADDOENSIS PAUCICOSTATA PERLONGA PHAEOCEPHALA PHYSOCHLAENA PRINGLEI PRINGL	VAR VAR VAR	LEPTONERVIA AMERICANA AMERICANA DEBILIS  GIGAS SUBTURBINATA LAEVIVAGINATA
1128966 1266150 1129094 89120 309085	TYPE HOLOTYPE HOLOTYPE TYPE MATERIAL SYNTYPE	TUNIMANENSIS TURUMIQUIRENSIS VENOSIVAGINATA VITREA WHITNEYI		
309086	SYNTYPE	WHITNEYI		

GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

ISONEOTYPE		ABLATA		
ISOTYPE		ABSCONDITA	VAR	ROSTELLATA
HOLOTYPE	X	ABSCONDITIFORMIS		
ISOTYPE	X	ABSCONDITIFORMIS		
SYNTYPE		ACCEDENS		
TYPE COLLECTION		ACUTA	VAR	PALLIDA
ISOTYPE		ACUTINA		
SYNTYPE		ADUSTA	VAR	GLOMERATA
SYNTYPE		AENEA	-	
TYPE COLLECTION		AEQUA		
ISOTYPE		AESTIVALIFORMIS		
HOLOTYPE		ALATA	VAR	FERRUGINEA
ISOTYPE		ALOPECOIDEA	¥ 771.	TERROOTHEA
ISOTYPE		ALOPECOIDEA	VAD	SPARSI-SPICATA
		AMPHIBOLA		TURGIDA
HOLOTYPE				
TYPE		ANGUSTIOR	VAK	GRAC ILENTA
SYNTYPE		APERTA	1440	C110 C70 7 C74
ISOTYPE		AQUATIL IS	VAK	SUBSTRICTA
ISOTYPE		ARAPAHOENS IS		
HOLOTYPE		ARGYRANTHA		
ISOTYPE		ARGYRANTHA		
HOLOTYPE		ARISTATA	VAR	LONGO-LANCEOLATA
ISOTYPE		ARSENII		
HOLOTYPE		ARTITECTA	VAR	SUBTILIROSTRIS
SYNTYPE		ASSINIBOINENSIS		
TYPE COLLECTION		AZTECICA		
TYPE COLLECTION		BACKANA		
SYNTYPE		BACKII		
HOLOTYPE		BARBARAE		
ISOTYPE		BARTLETTII		
HOLOTYPE		BAYARDI		
ISOTYPE		BILTMOREANA		
HOLOTYPE		BONPLANDII	VAR	MINOR
ISOTYPE		BREWERI		
ISOTYPE		BURCHELLIANA		
ISOTYPE		CAESARIENSIS		
PARATYPE		CANESCENS	VAR	DISJUNCTA
ISOTYPE		CANESCENS	VAR	SPHAEROSTACHYA
TYPE COLLECTION		CAROLINIANA		
TYPE		CEPHALOPHORA	VAR	MAXIMA
SYNTYPE		CHALCIOLEPIS		
HOLOTYPE		CILIARIS		
TYPE COLLECTION		CINNAMOMEA		
ISOTYPE		CIRCINNATA		
HOLOTYPE		CLIVICOLA		
HOLOTYPE		COLLECTA		
SYNTYPE		CONJUNCTA		
HOLOTYPE		COOLEYI		
HOLOTTE		COULLII		

GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

·		·	•	
SYNTYPE		CRAWFORDII		
SYNTYPE		CRAWFORDII	VAR	VIGENS
TYPE		CREBRIFLORA		
HOLOTYPE		CRINITA		BREVICRINIS
SYNTYPE		CRINITA	VAR	SIMULANS
ISOTYPE		CRISTATA CRUS-CORVI		
ISOTYPE HOLOTYPE			VAD	VIRGINIANA
HOLOTYPE		CUMULATA		SOLUTA
ISOTYPE		DANAENSIS	FUK	SULUTA
ISOTYPE		DAVYI		
HOLOTYPE		DEBILIS	VAR	INTERCURSA
HOLOTYPE		DEBILIS		PUBERA
ISOTYPE		DEVIA		
HOLOTYPE		DEWEYANA	VAR	COLLECTANEA
TYPE COLLECTION		DEWEYANA	VAR	SPARSIFLORA
HOLOTYPE		DIGITALIS		ASYMMETRICA
HOLOTYPE				MACROPODA
TYPE MATERIAL		DOUGLASII	VAR	DENSISPICATA
ISOTYPE	Х	DUMANII		
ISOTYPE		DUTILLYI EASTWOODIANA		
I SOTYPE HOLOTYPE		ECHINATA	VAD	ORMANTHA
ISOTYPE		EKMANII	VAIN	UNMANTHA
ISOTYPE		EKMANII	VΔR	HOTTENSIS
TYPE MATERIAL		ELBERTANA	¥ / / / /	11011211313
ISOTYPE		ELEOCHARIS		
ISOTYPE		ELYNOIDES		
HOLOTYPE		ENGELMANNI		
TYPE MATERIAL		ERXLEBENIANA		
ISOTYPE		EURYSTACHYA		
HOLOTYPE		EXPLORATORUM		
TYPE COLLECTION		FELIPENSIS		
ISOTYPE		FESTIVELLA FETA		
HOLOTYPE ISOTYPE		FILIFOLIA	VAD	EROSTRATA
		FISSA		ARISTATA
HOLOTYPE		FLACCOSPERMA	VAIN	ANISTATA
HOLOTYPE		FLAVA	VAR	GASPENSIS
ISOTYPE		FLAVA		RECTIROSTRA
ISOTYPE		FOENEA		PERPLEXA
ISOTYPE		FORMOSA		
ISOTYPE		FRANKLINII		
ISOTYPE		GARBERI		
HOLOTYPE		GARBERI		BIFARIA
HOLOTYPE		GLAREOSA	VAR	AMPHIGENA
ISOTYPE		GLAUCODEA		
ISOTYPE		GRACILIOR		

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SHEET NO. KIND OF TYPE TAXON

GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

ISOTYPE HOLOTYPE HOLOTYPE TYPE COLLECTION SYNTYPE HOLOTYPE SYNTYPE HOLOTYPE SYNTYPE HOLOTYPE SYNTYPE TYPE MATERIAL HOLOTYPE TYPE COLLECTION SYNTYPE	GRACILLIMA GRISEA GUATEMALENSIS HALLIANA HALLII HALSEYANA HARPERI HAYDENIANA HEBETATA HEPBURNII HETERONEURA HITCHCOCKIANA HOOKERANA	VAR	RIGIDA
HOLOTYPE HOLOTYPE HOLOTYPE ISOTYPE ISOTYPE			LAURENTIANA LAURENTIANA
HOLOTYPE HOLOTYPE ISOTYPE	INFLATA INOPS INTERIMUS	VAR	ANTICOSTENSIS
ISOTYPE HOLOTYPE HOLOTYPE HOLOTYPE ISOTYPE	INTERIOR INTERIOR INTERIOR INTUMESCENS INVOLUCRATELLA	VAR VAR	CHARLESTONENSIS JOSSELYNII KEWEENAWENSIS VENTRIOSA
ISOTYPE HOLOTYPE SYNTYPE ISOTYPE HOLOTYPE HOLOTYPE	KALOIDES KATAHDINENSIS KELLOGGII KOKRINENSIS LAEVI-CONICA LANGEANA		
HOLOTYPE ISOTYPE	LASIOCARPA LATEBRACTEATA	VAR	AMERICANA
HOLOTYPE HOLOTYPE ISOTYPE ISOTYPE TYPE COLLECTION	LAXIFLORA LAXIFLORA LEIOCARPA LEIOPHYLLA LEMMONI		LEPTONERVIA SERRULATA
TYPE COLLECTION ISOTYPE		VAR	AMER I CANA
HOLOTYPE ISOTYPE TYPE COLLECTION HOLOTYPE HOLOTYPE TYPE COLLECTION	LIVIDA LONGICULMIS LUZULINA MACKENZIANA MEADII MEEKII	VAR	RUFINAEFORMIS

SHEET NO. KIND OF TYPE

HOLOTYPE

ISOTYPE

TAXON

GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

**ISOTYPE** MELOZITNENSIS HOLOTYPE **MENDOCINENSIS** HOLOTYPE MERRITT-FERNALDII ISOTYPE MESOCHOREA ISOTYPE MICROCHAETA HOLOTYPE MILIARIS VAR AUREA HOLOTYPE MIRABILIS VAR PERLONGA SYNTYPE MIRABILIS SYNTYPE MIRABILIS VAR TINCTA HOLOTYPE MISANDROIDES HOLOTYPE MONTEREYENSIS ISOTYPE NELSONII ISOTYPE X NEOBIGELOWII HOLOTYPE X NEOFILIPENDULA X NEOPALEACEA ISOTYPE HOLOTYPE NERVINA ISOTYPE NEUROPHORA ISOTYPE NIGRICANS ISOTYPE NOV AE - ANGLIAE ISOTYPE X NUBENS ISOTYPE **NUBICOLA** HOLOTYPE NUTTALLII ISOTYPE OAXACANA ISOTYPE OBISPOENSIS ISOTYPE OBOVOIDEA OLIGOCARPA VAR LATIFOLIA HOLOTYPE ORMOSTACHYA HOLOTYPE HOLOTYPE ORONENSIS ISOTYPE PACHYSTACHYA **PADDOENSIS** ISOTYPE ISOTYPE PALAWANENSIS HOLOTYPE PALLESCENS VAR NEOGAEA HOLOTYPE PAPULOSA ISOTYPE X PATUENSIS HOLOTYPE PAUPERCULA VAR BREVISQUAMA HOLOTYPE PAUPERCULA VAR PALLENS ISOTYPE **PAYSONIS** PERLONGA HOLOTYPE PERSTRICTA ISOTYPE **ISOTYPE** PETRIEI TYPE COLLECTION PHAEOCEPHALA PHYLLOMANICA HOLOTYPE ISOTYPE PINETORUM VAR ELATIOR I SOTYPE PIPERI TYPE MATERIAL PLATYPHYLLA TYPE MATERIAL PODOCARPA

PORTERI

POTOSINA

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SHEET NO. KIND OF TYPE TAXON

HOLOTYPE

GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

HOLOTYPE		PRAEGRACILIS		
HOLOTYPE		PRAIREA		
ISOTYPE		PRATENSIS	VAR	FURVA
SYNTYPE		PREISSII		
TYPE COLLECTION		PRINGLEI		
ISOTYPE		PROJECTA		
ISOTYPE		PROPOSITA		
HOLOTYPE	X	PSEUDO-FULVA		
ISOTYPE	X	QUEBECENSIS		
SYNTYPE		RAYNOLDSII		
HOLOTYPE		RETROCURVA		
ISOTYPE		RETROCURVA	VAR	COPULATA
TYPE MATERIAL		RICHARDSONII		
HOLOTYPE		RICHARDSONII	FOR	EXSERTA
HOLOTYPE		ROSEA		ARKANSANA
ISOTYPE		RUBRO-BRUNNEA	VAR	ELINEOLATA
HOLOTYPE		RUGATA		
HOLOTYPE		SARTWELLIANA		
ISOTYPE	X	SAXENII	NM.	FERRUGINEA
ISOTYPE		SCHAFFNERI		
HOLOTYPE		SCHNEIDERI		
HOLOTYPE		SCHWEINITZII		
HOLOTYPE		SCOPARIA		CONDENSA
SYNTYPE		SCOPARIA		FULVA
HOLOTYPE		SCOPARIA		MONILIFORMIS
HOLOTYPE		SCOPARIA		PERACUTA
HOLOTYPE		SCOPARIA		SUBTURBINATA
HOLOTYPE		SCOPARIA	VAR	TESSELLATA
ISOTYPE		SEATONIANA		
ISOTYPE		SONOMENSIS		
HOLOTYPE		SOPERI		
ISOTYPE		SPECUICOLA		
TYPE COLLECTION		SPRETA		4 4 5 1 / 1 / 4 0 7 1 1 4 7 4
TYPE COLLECTION				LAEVIVAGINATA
SYNTYPE				CUMULATA
SYNTYPE				ECHINODES
SYNTYPE		STYLOSA	VAR	VIRENS
ISOTYPE ISOTYPE		SUB-BRACTEATA SUBFUSCA		
ISOTYPE				
ISOTYPE		SUK SDORFII SYCHNOCEPHALA		
HOLOTYPE HOLOTYPE		TENERA TENERA	VAD	RICHII
ISOTYPE		TENUIFLORA		SETACEA
HOLDTYPE		TERRAE-NOVAE	VAR	SETAGEA
HOLOTYPE		THURBERI		
HOLOTYPE	Y	TRICHINA		
HOLUTTE	^	TRICHINA		

TRICHOPHYLLA

### GH (GRAY HERBARIUM, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS)

ISOTYPE ISOTYPE ISOTYPE		TRISPERMA TSOI TURUMIQUIRENSIS	VAR	BILLINGSII
HOLOTYPE		UMBELLATA	VAR	VICINA
ISOTYPE		UNCOMPAHGRE		
HOLOTYPE		VAGINATA	VAR	ALTO-CAULIS
HOLOTYPE		VALLICOLA		
ISOTYPE		VENOSIVAGINATA		
ISOTYPE		VERNACULA	VAR	HOBSONII
HOLOTYPE		VESICARIA	VAR	JEJUNA
HOLOTYPE		VESICARIA	VAR	LAURENTIANA
HOLOTYPE		VESTITA	VAR	KENNEDYI
HOLOTYPE		VICARIA		
ISOTYPE		VIRIDULA	FOR	PYGMAEA
HOLOTYPE		VULPINOIDEA	VAR	PYCNOCEPHALA
HOLOTYPE		WATSONI		
ISOTYPE		WIEGANDII		
TYPE COLLECTION		WILLDENOVII	VAR	PAUCIFLORA
HOLOTYPE		MOODII		
HOLOTYPE	X	XANTHINA		
SYNTYPE		XERANTICA		

## JEPS (JEPSON HERBARIUM, UNIVERSITY OF CALIFORNIA, BERKELEY)

2511	ISOTYPE	DAVYI		
4013	ISOTYPE	INTERIOR	VAR	CHARLESTONENSIS
20008	ISOTYPE	JEPS ONI I		
19722	ISOTYPE	MARI POSANA		

### MO (MISSOURI BOTANICAL GARDEN, ST. LOUIS)

	TYPE COLLECTION		ABSCONDITA	VAR	ROSTELLATA	
1306480	ISOTYPE	X	ABSCONDITIFORMIS			
	SYNTYPE		ACCEDENS			
	TYPE MATERIAL		AESTIVALIFORMIS			
	TYPE MATERIAL		AESTIVALIS			
	TYPE COLLECTION		AGGL OMERATA			
	TYPE COLLECTION		AQUATILIS	VAR	SUBSTRICTA	
	SYNTYPE		ATHROSTACHYA			
1834152	HOLOTYPE		AUSTRO-CAROLINIANA			
	ISOTYPE		AUTUMNALIS			
	TYPE COLLECTION		AZTECICA			
1611724	SYNTYPE		BANKSII			
	ISOTYPE		BONPLANDII	VAR	MINOR	
710112	TYPE COLLECTION		BULBOSTYLIS			
	TYPE COLLECTION		CALIFORNICA			

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SHEET NO. KIND OF TYPE TAXON

MO (MISSOURI BOTANICAL GARDEN, ST. LOUIS)

	SYNTYPE	CHALCIOLEPIS		
	ISOTYPE	CILIARIS		
1108572	ISOTYPE	CRUS-CORVI	VAR	VIRGINIANA
	TYPE MATERIAL	DEBILIFORMIS		
1306423	ISOTYPE	DIGITALIS	VAR	ASYMMETRICA
1129747	ISOTYPE	DIGITALIS	VAR	MACROPODA
	ISOTYPE	DUDLEYI		
	TYPE MATERIAL	ELMERI		
	TYPE COLLECTION	ELYNOIDES		
	ISOTYPE	EPAPILLOSA		
1816497	TYPE COLLECTION	FENDLERIANA		
	ISOTYPE	FISSA		
	ISOTYPE	GRACILIOR		
	TYPE MATERIAL	GYMNOCLADA		
	SYNTYPE	HALLII		
	TYPE MATERIAL	HAYDENII		
	ISOTYPE	ILLOTA		
1816496	TYPE COLLECTION	INTERIOR		
1148381	ISOTYPE	INTERIOR		CHARLESTONENSIS
1190731	ISOTYPE	INTERIOR		CHARLESTONENSIS
1201697	ISOTYPE	INTERIOR	VAR	CHARLESTONENSIS
	TYPE MATERIAL	INVOLUCRATELLA		
	SYNTYPE	LAC UNA RUM		
1692174	ISOTYPE	LATEBRACTEATA		
	ISOTYPE	LAXIFLORA		LEPTONERVIA
	TYPE COLLECTION	LEPORINA	VAR	AMERICANA
	TYPE MATERIAL	LUZULINA		
	ISOTYPE	MEADII		
	ISOTYPE	MENDOCINENSIS		
952735	TYPE COLLECTION	NEBRASKENSIS	VAR	ERUCAEFORMIS
	TYPE MATERIAL	NUDATA		
	TYPE COLLECTION	OAXACANA		
1220830	TYPE MATERIAL	OBOVOIDEA		
	TYPE MATERIAL	OKLAHOMENSIS		
	TYPE MATERIAL	PAUCICOSTATA		
	TYPE MATERIAL	P ER GLOBOSA		
	ISOTYPE	PERLONGA		
	TYPE COLLECTION	PHAEOCEPHALA PHYLLOMANICA		
020015	ISOTYPE			
920815	TYPE COLLECTION	PHYSOCHLAENA		
2002968	TYPE MATERIAL	PRAINII PREISSII		
2002900	SYNTYPE TYPE COLLECTION	PRINGLEI		
1260436	ISOTYPE	RUBRO-BRUNNEA	VAD	ELINEOLATA
1306478	ISOTYPE	RUGATA	VAR	CLINLOCATA
1200410	TYPE MATERIAL	SALINAEFORMIS		
	TYPE MATERIAL	SAXIMONTANA		
	ISOTYPE	SCABRIUSCULA		
	130111	3375111030027		

SHEET NO. KIND OF TYPE

SYNTYPE

SYNTYPE

TAXON

(MISSOURI BOTANICAL GARDEN, ST. LOUIS) MO

2002967 TYPE COLLECTION SCAPOSA TYPE COLLECTION SPRETA TYPE COLLECTION STIPATA SYNTYPE STRAMINEA TYPE COLLECTION STYLOFLEXA SYNTYPE STYLOSA 95212 TYPE COLLECTION SUKSDORFII TYPE COLLECTION VIOL ACEA **ISOTYPE** VITREA SYNTYPE WHITNEYI

VAR LAEVIVAGINATA VAR CUMULATA

VAR SPARSI-SPICATA

VAR VIRENS

NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

> TYPE **ABDITA** ISONEOTYPE ABLATA ISOTYPE ABORIGINUM HOLOTYPE ABRAMSII HOLOTYPE **ABRUPTA** TYPE COLLECTION ABSCONDITA

VAR ROSTELLATA

WHITNEYI

WHITNEYI

**ISOTYPE** X ABSCONDITIFORMIS TYPE COLLECTION **ACUTINA** 

TYPE COLLECTION **AEQUA** TYPE MATERIAL AESTIVALIS TYPE AGGREGATA SYNTYPE ALATA TYPE COLLECTION ALBIDA **ISOTYPE** ALMA

ISOTYPE ALOPECOIDEA ALOPECOIDEA ISOTYPE

TYPE COLLECTION AMPHIBOLA TYPE COLLECTION **ANGUSTIOR** ISOTYPE APODA TYPE COLLECTION AQUATILIS **ISOTYPE ARAPAHOENSIS** TYPE **ARCTAEFORMIS** 

TYPE COLLECTION **ARCTICA** ISOTYPE ARSENII SYNTYPE ATHROSTACHYA

SYNTYPE **ATHROSTACHY A I SOTYPE** A TRACTODES ATROSQUAMA ISOTYPE

VAR ANDROGYNA ISOTYPE AUREA TYPE COLLECTION **AUROLENSIS** 

**ISOTYPE** AZUAYAE SYNTYPE BACKII

SHEET NO. KIND OF TYPE

HOLOTYPE

TAXON

## NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

COTYPE BALTZELLII **ISOTYPE** BARBARAE TYPE COLLECTION BARRATTII TYPE BARTLETTI1 TYPE BILTMOREANA TYPE BONANZENSIS TYPE COLLECTION BREVICAULIS HOLOTYPE BREVISQUAMA SYNTYPE BRONGNIARTII VAR DENSA TYPE COLLECTION BUCKLEYI TYPE COLLECTION BUSHII TYPE CAESARIENSIS TYPE COLLECTION CALIFORNICA HOLOTYPE CAMPYLOCARPA SSP AFFINIS **ISOTYPE** CANESCENS VAR DUBIA TYPE COLLECTION CANESCENS VAR SPHAEROSTACHYA HOLOTYPE CAREYANA TYPE COLLECTION CAROLINIANA CHALC IOLEP IS SYNTYPE ISOTYPE CHIAPENSIS HOLOTYPE CHIHUAHUAENSIS TYPE CHIKUNGANA ISOTYPE CILIARIS HOLOTYPE COLUMBIANA TYPE CONCINNOIDES **ISOTYPE** CONSTANCEANA TYPE CONVOLUTA TYPE COLLECTION COSTATA TYPE COLLECTION CRANDALLII TYPE CREBRIFLORA ISOTYPE CRUS-CORVI VAR VIRGINIANA TYPE CRYPTOLEPIS ISOTYPE **CUBENSIS** TYPE COLLECTION CUBENSIS VAR FLACCIDA SYNTYPE CUSICKII ISOTYPE DAVYI TYPE COLLECTION DEWEYANA VAR SPARSIFLORA TYPE COLLECTION DIGITALIS VAR GLAUCA VAR MACROPODA ISOTYPE DIGITALIS ISOTYPE DUDLEYI SYNTYPE **DURIFOLIA** TYPE **EBENEA** TYPE COLLECTION EGGERTII ISOTYPE EGGLESTONII TYPE EGREGIA TYPE MATERIAL EKMANII ISOTYPE ELRODI

**EPAPILLOSA** 

SHEET NO. KIND OF TYPE

ISOTYPE

TAXON

## NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

ISOTYPE EPAPILLOSA ISOTYPE EXPLORATORUM TYPE MATERIAL **FARGESII** TYPE COLLECTION **FELIPENSIS** TYPE **FENDLERIANA** SYNTYPE FESTIVA **FESTIVA** TYPE COLLECTION VAR DECUMBENS TYPE MATERIAL FESTIVA VAR STRICTA TYPE **FESTIVELLA** HOLOTYPE FISSA ISOTYPE FISSA VAR ARISTATA TYPE FLACCIDULA ISOTYPE FLACCOSPERMA TYPE FRANKLINII TYPE **FULVESCENS** TYPE MATERIAL **FUSCOLUTEA** TYPE FUSCOTINCTA TYPE GAYANA VAR HYALINA TYPE COLLECTION **GEYERI** ISOTYPE GLAREOSA VAR AMPHIGENA GRIFFITHII TYPE COLLECTION ISOTYPE **GYMNOCLADA I SOTYPE** GYNODYNAMA SYNTYPE HALEI SYNTYPE HALLII SYNTYPE HALLII ISOTYPE HALSEYANA HARFORDII HOLOTYPE **I SOTYPE** HARPERI TYPE COLLECTION HASSEI TYPE HELLERI TYPF HETEROSTACHYA **I SOTYPE** VAR BREVIGLUMA HINDSII TYPE COLLECTION HIRSUTA VAR CUSPIDATA TYPE HOLMIANA SYNTYPE HOODII VAR NERVOSA SYNTYPE HOODII VAR NEUROCARPA TYPE COLLECTION HOOKERANA VAR LAURENTIANA ISOTYPE HORNSCHUCHI AN A HOLOTYPE **HOUGHTONI ANA** TYPE COLLECTION IGNOTA TYPE COLLECTION ILLINOENSIS **TYPE** INCOMPERTA INCURVIFORMIS HOLOTYPE INOPS ISOTYPE HOLOTYPE INTEGRA TYPE INTERIMUS

INTERIOR

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TAXON

# NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

ISOTYPE INTERIOR VAR CHARLESTONENSIS ISOTYPE INTERIOR VAR JOSSELYNII INTERIOR VAR KEWEENAWENSIS ISOTYPE TYPE COLLECTION INVOLUCRATELLA HOLOTYPE JAMESII HOLOTYPE **JEPSONII** SYNTYPE JONESII **ISOTYPE** KATAHDINENSIS TYPE KUL I NGANA TYPE LACINIATA SYNTYPE LACUNARUM ISOTYPE LANCIFRUCTUS TYPE LARICINA ISOTYPE LAXIFLORA VAR LEPTONERVIA **I SOTYPE** LAXIFLORA VAR SERRULATA TYPE COLLECTION LEAVENWORTHII ISOTYPE LENTICULARIS VAR PAULLIFRUCTUS TYPE COLLECTION LEPORINA VAR AMERICANA TYPE LEPTOPODA TYPE COLLECTION LONGIROSTRIS VAR MICROCYSTIS TYPE LUNELLIANA TYPE COLLECTION LUZULINA COTYPE MACROKOLFA TYPE MACROSPERMA ISOTYPE MADRENSIS **ISOTYPE** MANDONIANA VAR DEBILIS TYPE MARCIDA HOLOTYPE MAR I POSANA MEADII. ISOTYPE TYPE **MEDITERRANIA** ISOTYPE MENDOC INENS IS TYPE MATERIAL **MERRILLII** MICROPTERA TYPE **ISOTYPE** MISANDROIDES ISOTYPE MISERA MOHRIANA HOLOTYPE HOLOTYPE MOLESTA SYNTYPE **MONTANENSIS** TYPE MATERIAL NANA ISOTYPE NEBRASKENSIS ISOTYPE **NEBRASKENS IS** VAR ERUCAEFORM IS ISOTYPE NEBRASKENSIS VAR ULTRIFORMIS HOLOTYPE NELSONII X NEOBIGELOWII ISOTYPE TYPE COLLECTION NEOMEXICANA ISOTYPE **NEUROPHORA** TYPE COLLECTION NIGRO-MARGINATA ISOTYPE NUTTALLII

VAR STAMINATA

SHEET NO. KIND OF TYPE

TYPE

TAXON

## NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

ISOTYPE OBISPOENSIS TYPE OEDERI VAR ROUSSEAUIANA TYPE OKLAHOMENSIS SYNTYPE OLYMPICA TYPE ONUSTA SYNTYPE OREGONENSIS ISOTYPE ORONENSIS TYPE COLLECTION OXYLEPIS VAR PUBESCENS **ISOTYPE PADDOENSIS** TYPE MATERIAL **PALAWANENS IS** SYNTYPE PANSA ISOTYPE PAPULOSA TYPE COLLECTION PARRYANA TYPE COLLECTION PAUCICOSTATA HOLOTYPE PELOCARPA HOLOTYPE PERGLOBOSA ISOTYPE PERLONGA TYPE PERSTRICTA TYPE PETASATA TYPE **PETRICOSA** TYPE COLLECTION PHAEOCEPHALA ISOTYPE PHAEOLEPIS TYPE MATERIAL **PHILOCRENA ISOTYPE** PHYLLOMANICA TYPE COLLECTION PHYSOCHLAENA TYPE COLLECTION PICTA I SOT YPF PINETORUM VAR ELATIOR TYPE MATERIAL PITYOPHILA HOLOTYPE PLATYLEPIS PRAECEPTORIUM HOLOTYPE TYPE COLLECTION PRINGLEI TYPE COLLECTION PRIONPHYLLA TYPE COLLECTION PROJECTA HOLOTYPE **PROPOSITA** TYPE COLLECTION **PSEUDOJAPONICA** PTYCHOCARPA TYPE COLLECTION TYPE COLLECTION **PURPURIFERA** QUADRIFIDA SYNTYPE SYNTYPE QUADRIFIDA VAR LENIS ISOTYPE X QUEBECENSIS TYPE RACHILLIS TYPE RETROFLEXA COTYPE RHYNCHACHAENIUM **ISOTYPE** RORAIMENSIS **ISOTYPE** ROSAEOIDES **ISOTYPE** ROSEA VAR ARKANSANA TYPE ROSEA VAR PUSILLA

ROSEA

# NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

TYPE ISOTYPE TYPE TYPE TYPE HOLOTYPE TYPE COLLECTION TYPE COLLECTION TYPE COLLECTION ISOTYPE TYPE MATERIAL TYPE	RUBRO-BRUNNEA RUGATA RUGOSPERMA RUSBYI RUTHII SALINAEFORMIS SANGUINEA SARTWELLII SAVAIIENSIS SAXIMONTANA SCABRIUSCULA	VAR	ELINEOLATA
TYPE TYPE COLLECTION	SCIRPIFORMIS SCIRPOIDEA	VAD	GIGAS
TYPE COLLECTION	SCIRPOIDEA		STENOCHLAENA
TYPE COLLECTION	SCOPARIA		MINOR
ISOTYPE	SCOPARIA		SUBTURBINATA
ISOTYPE	SCOPARIA		TESSELLATA
HOLOTYPE	SCOULERI		
ISOTYPE	SHELDONII		
TYPE	SHELDONII		
TYPE COLLECTION	SICCATA		
HOLOTYPE	SIMULATA		
ISOTYPE	SONOMENSIS SPECUICOLA		
ISOTYPE TYPE	STANTONENSIS		
ISOTYPE	STELLATA		
TYPE	STELLULATA	VΔR	CONFERTA
TYPE	STENOPTERA	• • • • •	VOIII 21171
ISOTYPE	STERILIS	VAR	EXCELSIOR
TYPE COLLECTION	STEUDELII		
TYPE COLLECTION	STIPATA	VAR	LAEVIVAGINATA
TYPE COLLECTION	STIPATA		SUBSECUTA
ISOTYPE	STIPATA	VAR	UBERIOR
SYNTYPE	STRAMINEA		CUMUL AT A
SYNTYPE	STRAMINEA		RENIFORMIS
TYPE COLLECTION	STRICTA	VAR	XEROCARPA
TYPE COLLECTION	STYLOFLEXA		
HOLOTYPE TYPE	SUB-BRACTEATA SUBORBICULATA		
TYPE MATERIAL	SUBTRANSVERSA		
ISOTYPE	SUKSDORFII		
SYNTYPE	SUKSDORFII	VΔR	OVALIS
HOLOTYPE	TAMAKII		3111213
HOLOTYPE	TENERAEFORMIS		
SYNTYPE	TERETIUSCULA	VAR	AMPLA
ISOTYPE	TOMPKINSI		
ISOTYPE	TOREADORA		
TYPE COLLECTION	TORTA	VAR	STAMINATA

VAR HOBSONII

VAR ANNECTANS

SHEET NO. KIND OF TYPE

TAXON

#### NY (NEW YORK BOTANICAL GARDEN, NEW YORK CITY)

ISOTYPE TOWNSENDII TYPE TRACYI ISOTYPE TRIANGULARIS ISOTYPE TRISPERMA TYPE TSOI HOLOTYPE TUMULICOLA TYPE **TURGESCENS** ISOTYPE TURUMIQUIRENS IS TYPE UNDERWOODII TYPE UNILATERALIS

ISOTYPE VAGANS

HOLOTYPE VERNACULA
TYPE COLLECTION WERDERMANNII
SYNTYPE WHITNEYI
SYNTYPE WHITNEYI
TYPE COLLECTION WILKESII

TYPE COLLECTION WILKESII
TYPE COLLECTION WRIGHTII
TYPE XANTHOCARPA

SYNTYPE XERANTICA
TYPE COLLECTION XEROCARPA
TYPE YUKONENSIS

# UC (UNIVERSITY OF CALIFORNIA, BERKELEY)

905439 HOLOTYPE APODA 905436 HOLOTYPE **ARAPAHOENSIS** 50814 HOLOTYPE DAVYI INTERIOR 910020 HOLOTYPE VAR CHARLESTONENSIS 127723 HOLOTYPE LANCIFRUCTUS 55234 HOLOTYPE LEPORINELLA 1098 ISOTYPE MENDOCINENSIS 319673 HOLOTYPE OBLANCEOLATA 1060 HOLOTYPE PACHYCARPA 905434 HOLOTYPE PAYSONIS 835699 ISOTYPE SONOMENSIS SUBIMPRESSA 905433 HOLOTYPE 905441 HOLOTYPE TRIBULOIDES VAR SANGAMONENSIS

2003161	TYPE COLLECTION		ABSCONDITA	VAR	ROSTELLATA
2003299	ISOTYPE	Х	ABSCONDITIFORMIS		
25164	TYPE COLLECTION		ACUTINA		
817087	TYPE COLLECTION		ACUT INA		

27286	HOLOTYPE	ACUTINELLA		
440179	TYPE COLLECTION	AGGLOMERATA		
617798	TYPE	AGROSTOIDES		
694342	TYPE	AGROSTOIDES		
858947	TYPE COLLECTION	AL BO-NIGRA		
2231424	TYPE	AMPLISQUAMA		
865058	TYPE	ANTHOXANTHERA		
1030011	TYPE COLLECTION	ARSENII		
2265958	HOLOTYPE	ATHABASCENSIS		
319165	SYNTYPE	ATHROSTACHYA		
2133192	TYPE	ATRACTODES		
2096188	ISOTYPE	ATROFUSCA	VAR	DECOLORATA
622651	HOLOTYPE	ATROSQUAMA		
817295	HOLOTYPE	AUTUMNALIS		
1933437	ISOTYPE	AZUAYAE		
2333748	ISOTYPE	BAMBUSETORUM		
1232938	SYNTYPE	BANKSII		
415269	TYPE COLLECTION	BRACHYPODA		
964504	TYPE COLLECTION	BRAINERDII		
711129	TYPE	BRUNNEA	VAR	SUBTEIOGYNA
587668	TYPE COLLECTION	BULBOSTYLIS	• • • • • • • • • • • • • • • • • • • •	303,2233,,,,,
29741	TYPE COLLECTION	CALIFORNICA		
319268	TYPE COLLECTION	CALIFORNICA		
690937	TYPE COLLECTION	CAMPLYOCARPA		
1885701	ISOTYPE	CAMPYLOCARPA	SSP	AFFINIS
368814	SYNTYPE	CHALCIOLEPIS		
28433	ISCTYPE	CHAPMANI		
2460272	HOLOTYPE	CHIAPENSIS		
306281	ISOTYPE	CHIHUAHUAENSIS		
462090	ISOTYPE	CILIARIS		
28457	TYPE COLLECTION	CINNAMOMEA		
319228	TYPE COLLECTION	CINNAMOMEA		
350077	TYPE COLLECTION	CLADOSTACHYA	VAR	MA XI MA
1839933	ISOTYPE	CLIVICOLA	****	
2038822	TYPE COLLECTION	COMANS	VAR	STRICTA
27235	TYPE MATERIAL	CONFERTIFLORA	* * * * * * * * * * * * * * * * * * * *	
1032323	HOLOTYPE	CONSPECTA		
278555	ISOTYPE	CRINITA	VAR	BREVICRINIS
278555	SYNTYPE	CRINITA		SIMULANS
1682487	ISOTYPE	CRUS-CORVI		VIRGINIANA
1302602	TYPE COLLECTION	CUBENSIS	* * * * * * * * * * * * * * * * * * * *	7 2 11 3 2 11 2 1 11 1
1765700	ISOTYPE	DANAENSIS		
2003164	ISOTYPE	DEBILIS	VΔR	INTERCURSA
2003133	ISOTYPE	DIGITALIS		ASYMMETRICA
969118	TYPE COLLECTION	DIGITALIS		GLAUCA
1761151	ISOTYPE	DIGITALIS		MACROPODA
817314	TYPE COLLECTION	DONNELL-SMITHII	* 17 17	
2176489	ISOTYPE	X DUMANII		

579795	TYPE MATERIAL	DURANDII		
857864	TYPE	EGGLESTONII		
2466328	HOLOTYPE	EGGLESTONII	VAR	FESTIVELL I FORM IS
1411790	COTYPE	EKMANII		
1414090	TYPE COLLECTION	EKMANII	VAR	HOTTENSIS
854950	TYPE MATERIAL	ELMERI		
1531248	TYPE MATERIAL	ELRODI		
368818	TYPE COLLECTION	ELYNOIDES		
270933	ISOTYPE	EPAPILLOSA		
2265959	HOLOTYPE	EURYSTACHYA		
2176495	ISOTYPE	X EXSALINA		
1123660	ISOTYPE	FARGESII		
2449506	ISOTYPE	FISSA	VAR	ARISTATA
468192	TYPE	FLACCIFOLIA		
817810	HOLOTYPE	FRACTA		
397187	TYPE COLLECTION	FUSCOLUTEA		
251773	TYPE COLLECTION	FUSCOTINCTA		
817237	TYPE COLLECTION	FUSCOTINCTA		
63525	TYPE MATERIAL	GARBERI		
660800	TYPE	GEOPHILA		
319177	ISOTYPE	GRACILIOR		
29651	SYNTYPE	HALLII		
28685	I SOTYPE	HARFORDII		
509004	ISOTYPE	HELLERI		
28206	TYPE COLLECTION	HETERONEURA		
802160	TYPE MATERIAL	ICHANGENSIS		
235568	TYPE COLLECTION	IDAHOA		
235569	TYPE COLLECTION	IDAHOA		
2265956	HOLOTYPE	INCONDITA		
	ISOTYPE	INTERIMUS		
1733722	ISOTYPE	INTERIOR		CHARLESTONENSIS
605797	ISOTYPE	INTERIOR		JOSSELYNII
1697057	ISOTYPE	INTERIOR	VAR	KEWEENAWENSIS
30661	TYPE COLLECTION	INVOLUCRATELLA		
82 58 90	TYPE MATERIAL	JAMESONI	VAR	SUBFULVA
1325047	ISOTYPE	KATAHDINENSIS		
2074700	TYPE MATERIAL	KAUAIENSIS		
430229	SYNTYPE	LACUNARUM		
801132	SYNTYPE	LANCIFOLIA		
1932015	ISOTYPE	LARENSIS		
538796	HOLOTYPE	LEIOPHYLLA		
29211	TYPE COLLECTION	LEMMONI		
2231577	HOLOTYPE	LIMNOPHILA	\/AB	HEADWE
800846	SYNTYPE	LONGICRURIS	VAR	HENRYI
964880	TYPE COLLECTION	LUZUL INA		
1746479 27238	ISOTYPE TYPE MATERIAL:	MACROCLOSSA		
301267		MACROGLOSSA		
201701	TYPE	MADRENSIS		

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				_	•
969118	TYPE MATERIAL		MAGNIFOLIA		
1789621	ISOTYPE		MELOZITNENSIS		
29453	ISOTYPE		MENDOC I NENS IS		
711171	TYPE MATERIAL		MERRILLII		
27281	TYPE MATERIAL		MICANS		
2501314	ISOTYPE		MICRANTHA		
30695	ISOTYPE		MICROGLOCHIN	SSP	FUEGINA
2543807	HOLOTYPE		MICROPTERA		CRASSINERVIA
886422	HOLOTYPE		MISERABILIS		
2133195	ISOTYPE		MOHRIANA		
23257	SYNTYPE		MONTANENSIS		
2095886	ISOTYPE		MORRISSEYI		
27280	TYPE MATERIAL		NANA		
1438017	TYPE COLLECTION		NEBRASKENS IS	VAR	ERUCAEFORMIS
2433719	I SOTYPE	X	NEOBIGELOWII		
2176496	ISOTYPE	X	NEOPALEACEA		
286861	ISOTYPE		NERVINA		
31277	TYPE MATERIAL		NUTANS	VAR	JAPONICA
251772	TYPE COLLECTION		OAXACANA		
817656	TYPE COLLECTION		DAXACANA		
1678188	ISOTYPE		OBISPOENSIS		
30695	ISOTYPE		OLIGANTHA		
504456	ISOTYPE		ONUSTA		
27292	TYPE MATERIAL		OXYCARPA		
415172	TYPE		PACHYSTOMA		
529528	TYPE MATERIAL		PADDOENSIS		
872800	TYPE MATERIAL		PALAWANENSIS		
31344	ISOTYPE		PAPULOSA		
27275	TYPE MATERIAL		PARCIFLORA		
2133207	TYPE		PERCOSTATA		
461358	ISOTYPE		PERLONGA		
1545831	TYPE		PHALAROIDES	VAR	PARVULA
31374	TYPE MATERIAL		PICTA		
1563811	TYPE		PIRCHINCHENSIS	VAR	SIMPLEX
660821	TYPE		PITYOPHILA		
27269	TYPE MATERIAL		PLANATA		
2420276	HOLOTYPE		PLECTOCARPA		
2074725	TYPE MATERIAL		PLUVICA	VAR	KOOLAUENSIS
27270	TYPE MATERIAL		PODOGYNA		
458108	TYPE MATERIAL		PRAINII		
2265957	HOLOTYPE		PRATICOLA	VAR	SUBCORIACEA
865056	TYPE MATERIAL		PRESLII		
817724	TYPE COLLECTION		PRINGLEI		
1123683	ISOTYPE		PTEROLEPTA	1/40	******
1282178	TYPE MATERIAL		PURPUREOVAGINATA	VAR	ITATIAIAE
1398830	TYPE MATERIAL	V	PYCNOTHYSOS		
2433718 2133193	ISOTYPE TYPE	X	QUEBECENSIS QUICHENSIS		
2133193	1176		AOTCUEN212		

1872576 626608 2133190 1754487 2003132 30267 29888 319226 1545752	TYPE MATERIAL TYPE MATERIAL HOLOTYPE ISOTYPE ISOTYPE TYPE COLLECTION TYPE COLLECTION TYPE COLLECTION TYPE		RACHILLIS RAMOSII ROANENSIS RUBRO-BRUNNEA RUGATA RUSBYI SALINAEFORMIS SALINAEFORMIS SALTAENSIS	VAR	ELINEOLATA
2176493 528631 305734 528495 511177	ISOTYPE ISOTYPE TYPE COLLECTION TYPE COLLECTION TYPE COLLECTION	X	SAXENII SCABRIUSCULA SEATONIANA SHELDONII SMALLIANA	NM•	FERRUGINEA
1736782 30329 2006386 452499	ISOTYPE SYNTYPE ISOTYPE HOLOTYPE		SONOMENSIS SPECIFICA SPECUICOLA STELLATA		
616142 969091 28683 1765699 710428 1437926 1932033	TYPE MATERIAL TYPE COLLECTION ISOTYPE ISOTYPE TYPE MATERIAL TYPE COLLECTION ISOTYPE		STENOPHYLLA STIPATA SUB-BRACTEATA SUBNIGRICANS SUBTRANSVERSA SUKSDORFII TACHIRENSIS		DESERTORUM MAXIMA
2092356 2604281 568126 1675120 1933688	TYPE MATERIAL ISOTYPE HOLOTYPE TYPE MATERIAL ISOTYPE		TETSUOI TOMPKINSI TOWNSENDII TSOI TURUMIQUIRENSIS		
1872573 2050647 2231425 886234 1967819 279151	ISOTYPE ISOTYPE HOLOTYPE TYPE ISOTYPE ISOTYPE		VERNACULA VESICARIA VEXANS VIRIDIOR VITIENSIS VITREA		HOBSONII LAURENTIANA
2074653 2133191 2050636	TYPE COLLECTION TYPE COLLECTION ISOTYPE	x	WAHUENSIS WILLDENOWII XANTHINA		RUBIGINOSA MEGARRHYNCHA

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